Safety Maintenance

AMERICA'S PIONEER INDUSTRIAL SAFETY MAGAZINE • OCTOBER, 1960 • 50¢
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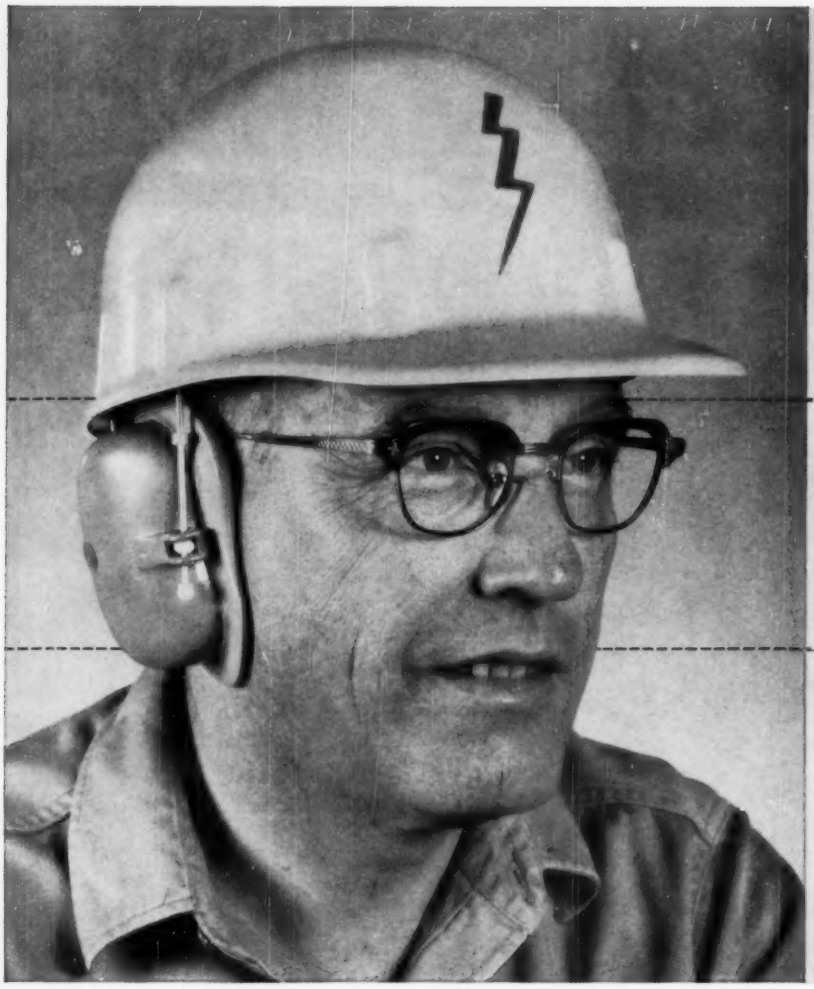

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protection + economy + worker acceptance

(For details, use Key # X-1 on card on page 11

LOSS STOPPERS

The bulletins and catalogs reviewed below are offered by the Reader Service Department of *SAFETY MAINTENANCE*. To obtain copies without cost or obligation, write in the key numbers on the Reader's Inquiry Card.

MISCELLANEOUS

Flaw Detection 399
Branson Instruments, Inc. Illustrated 8-page bulletin on ultrasonic flaw detection includes operation, techniques and a complete list of specifications for Sonoray 5 detector. Bulletin describes advantages of a new pulse-echo instrument which has exceptional low-frequency resolving power and penetration. Compact, unit can examine interior of metals, glass, plastics and even body tissue, without physical damage.

Machinery Mounts 400
Korfund Co., Inc. 6-page catalog gives latest data on stopping vibration, shock and noise transmission by using steel spring machinery mountings. Includes a series of eight typical case histories in which mounts were used to solve a representative range of vibration problems. Drawings of 10 typical installation arrangements, and easy-to-read data tables are also furnished.

Shock Measurement 401
Impact-O-Graph Corp. New 4-page brochure consists of text and photographs describing Impact-O-Graphs, mechanical 3-directional impact, acceleration and gravity recorders. They are small in size, light in weight and entirely self-contained; permanently record degree of shock or force on a pressure sensitive tape.

Industrial Insulation 402
Philip Carey Mfg. Co. Colorful brochure lists all types of Carey industrial insulations and insulating cements for use in power, chemical, petroleum, petrochemical and manufacturing industries. Includes information on two new products for temperatures up to 1900°F. Tabular selection guide indicates type of product to be used for given application.

FIRE PROTECTION

Fire Hose 403
Fyr-Fyter Co. 4-page illustrated folder contains complete feature and specification data on approximately twelve different styles of fire hose furnished for protection of industrial plants, mines, business, institutional and public buildings.

Printing Plant Protection 404
Cardox Div., Chemetron Corp. Illustrated bulletin discusses methods of properly protecting presses, reel rooms, ink mist filters, stereo remelt pots, etc. Pamphlet also discusses types of systems engineered to stop fires immediately before they cause serious damages.

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FOR MORE DATA

INDUSTRIAL HYGIENE

Radioactivity Monitoring 405
Nuclear Measurements Corp. New catalog is a 36-page display of radiation detection and measuring instruments for research, industrial and medical applications. Included are proportional counters, scalers, pulse height analyzers, survey meters, monitoring systems, etc.

Dust Filter 406
Day Co. Eight-page bulletin contains detailed information on improved dust filter which, with only three moving parts, filters and recovers dust with top efficiency from airstreams lightly or heavily loaded with extremely fine, coarse, abrasive or non-abrasive dusts. Specifications and dimensions of single and multiple installations, etc.

Dehumidifier Kits 407
Speco, Inc. New bulletin explains that each kit contains complete dehumidifier kit, a refill and a rust-resistant drip pail. Unit and refill are said to each absorb up to 10 times their own weight in moisture from air.

PERSONAL PROTECTIVE EQUIPMENT

Special Work Clothing 408
M. Setlow & Son, Inc. Multi-page catalog describes and illustrates many types of cotton work clothing including acid and caustic resistant types, flameproof garments and other specialized clothing for different industries. Cited among others are hooded coveralls for boiler maintenance.

Welding & Head Protection 409
Fibre Metal Products Co. Two-color 29-page catalog features profuse illustrations and descriptions of welding helmets and hand shields, goggles, safety hats and caps, chipping hammers, connectors, electrode holders and other equipment.

Industrial Hand Protection 410
Mine Safety Appliances. A broad line of coated fabric work gloves is described in four-page folder, including neoprene, natural rubber and vinyl plastic. Bulletin also contains a chart evaluating the chemical resistance of glove materials to a wide variety of acids, caustics, ketones, hydrocarbons and solvents.

MAINTENANCE

Midget Loader 411
Force-Flo, Inc. Two-page brochure details features of midget unit for loading thiokol compounds, 2-part activated ma-

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE

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OCTOBER, 1960 **Please send me the following free data**

Free Bulletins (Cont'd)

terials, caulking and glazing compounds, roofing cement, mastics, sealants, putties, adhesives, etc. into caulking guns and cartridges. Illustrated.

Unusual Masonry Coating 412

Sonneborn Chemical & Refining Corp. Attractive 8-page illustrated brochure describes a heavy bodied, water repellent coating which imparts a beautiful textured finish. It is used on above grade exterior and interior surfaces, and is both protective and decorative.

Petroleum Industry Cleaners 413

Conco Chemical Co. Four-page bulletin describes six of the company's cleaners and detergents designed to be used safely in refineries, gasoline plants, pipelines and similar hazardous areas. These chemicals are flameproof and also have non-toxic and non-corrosive qualities.

WARNING & COMMUNICATIONS

Power Megaphone 414

Wm. A. Holmin Corp. Attractive four-page brochure imparts information on transistorized megaphone. Complete data is given on the transistor amplifier and the power supply. Publication includes a cutaway section of the unit.

Vehicle Back-up Alarms 415

E.D. Bullard Co. Four-page black-and-white folder discusses alarms for use on various-sized trucks and for fork lift units. Easily attached alarms operate independently of electrical circuits or speedometer. Hammers strike bell with turn of wheel, when vehicle is in reverse. Includes installation instructions.

Mobile Radio 416

General Electrical Co. 24-page bulletin on two-way radio equipment discusses frequency allocations and the various combinations of two-way radio possible in each frequency. Also shown is difference between tubed equipment and transistorized models. Publication contains sections covering amplifiers, portables hand-carried two-ways, desk-type base stations, selective calling, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Number Key	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
106	Respirators & Masks
107	Protective Clothing
109	Safety Belts
110	Safety Gloves
112	Anti-Slip Soles
113	Oil-Resistant Soles
114	Welding Helmets
	FIRST AID AND HYGIENE
122	Sanitary Drinking Facilities
124	Salt Tablets
125	Resuscitator Tubes
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
129A	Stretcher Cases
130	Throat Medication
131	Eye Wash Fountains
131A	Emergency Showers
132	Portable Ventilators
133	Dust Collectors
135	Hearing Protectors
136	Noise Analysis Equipment
137	Noise Mufflers
138	Athlete's Foot Preventive
	FIRE PROTECTION
139	Fire Retardant Paint
140	Fire Extinguishers
141	Safety Cans
142	Fire Alarms
143	Safer Solvents
144	Degreasing Machines
145	Drum Safety Valve
146	Asbestos Textiles

Key Number	Subject
148	Watchmen's Control Systems
149	Fire Blankets
	LIGHTING AND WARNING DEVICES
150	Alarms & Warning Lights
153	Fluorescent Lamp Guards
154	Emergency Lights
	MAINTENANCE
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Floor Cleaning Machines
166	Floor Mats
167	Insulating Tape
168	Ultrasonic Flaw-Detector
169	Machine Motion Analyzer
	LADDERS & HANDLING
170	Ladders
171	Ladder Safety Devices
172	Scaffolds
173	Work Platforms
174	Emergency Ladder Rungs
176	Fork Truck Steering Aid
177	Carboy Pumps
	GUARDS
178	Machine Guards
179	Power Press Feeders
180	Safety Tools
181	Vacuum Sheet Lifters
182	Valve Operators
184	Safety Lock-Outs
	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
195	Changeable Letter Signs
196	Safety Poster Kit

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Safety Maintenance

formerly "SAFETY ENGINEERING"

Volume 120, Number 4 **October, 1960**

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AMERICA'S PIONEER INDUSTRIAL SAFETY MAGAZINE

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it's SAFE to say

● LOOK FOR LESS OBVIOUS DANGERS

Most of us are so intent upon battling prime hazards on the job that we are prone to by-pass the less obvious dangers which exist in practically every line of industry. A well-guarded punch press or shearing machine can prevent amputation, but cuts, scratches and hernias can result from handling sharp or heavy material. It is through the aggregate total of small injuries that management can find itself staring into gallons of red ink.

Just as an airplane crash with a sudden tragedy of fifty fatalities can pack more drama than double that life loss in a day's motor vehicle operation, so does a hand amputated at an unguarded machine seem more spectacular than dozens of minor wounds, many of which lead to infection with equally tragic and costly results.

A case in point can be illustrated by a recent report released by the Institute of Scrap Iron and Steel, Inc., which conducted a survey of accident experience on point-of-operation guards for alligator shears used in the scrap metal industry.

According to its report, the Institute received questionnaire returns from 238 scrap processors operating 570 alligator shears in all parts of the country. This is believed to be a project sufficiently extensive to provide the most authoritative source on which to base conclusions covering alligator shear accidental injuries.

In this day of scientifically guarded machines and heavy emphasis upon controlling the use of built-in safety features, it will come as a surprise to note the results of this carefully planned and executed survey. Facts reveal that the point of operation on an alligator shear is responsible for only a relatively few of the total injuries occurring on this machine in the entire iron and steel scrap industry. Of the 348 accidents reported to the Institute for a two-year period, only 11 cases resulted in amputations ranging from the tips of fingers to thumbs, and with but a single case resulting in the loss of two fingers.

The overwhelming majority of the injuries shown in the Institute's copyrighted report, came from minor cuts, bruises and scratches entailing no loss of time. Except for the very few amputations, all injuries were traced to flying or falling objects, or parts of the body being caught between portions of materials being sheared. It is significant that in nearly all the amputation cases, the operators were cleaning small objects such as valves without the use of tongs or other handling devices. As the shear operator is liable to the greater exposure of hazard, of the 348 reported accidents, 273 cases involved the operator. There were 66 injuries to helpers, 20 to the take-off men and 8 to others. In some cases, more than one person was injured in the same accident.

It is apparent from this survey that the point of operation is not the prime hazard area and that the guards at this area are not the sole answer to the prevention of accidents and injuries. The Institute points up the evident need for a hold-down device which would accommodate varying sizes and shapes of metal and prevent the metal from being forced from the blade or flying out on being cut. It is obvious, furthermore, that personal protective equipment such as steel-toe shoes, goggles, face shields, padded aprons, shinguards, hard hats and heavy leather gloves are a major necessity for operators and helpers. Equally obvious for safe shear operation is the need for skilled, trained operators, a clean, uncluttered work area, proper lighting and safe operating procedures outlined and executed by the safety and supervisory staff.

Obvious hazards require all possible control . . . but the less apparent causes of accidents need advance study before they have time to develop into major dangers.

● NATIONAL SAFETY CONGRESS

Once again, it is time to urge the widest possible attendance at the world's largest safety congress and exposition, sponsored for the 48th consecutive year by the National Safety Council. Nowhere in the world will there be a greater concentration upon all phases of accident prevention, fire control and industrial health conservation than in Chicago at several loop hotels for the full week of October 17th.

The vast exposition of safety devices, products and services alone warrants the greatest possible attendance by safety leaders and management representatives from all parts of the country. In addition, the hundreds of subject sessions will constitute the world's best market-place for the exchange of safety viewpoint and experience led by the outstanding authorities in their respective fields. SAFETY MAINTENANCE urges its loyal subscribers to participate to the fullest possible extent in the biggest, best and most rewarding safety congress in existence. We will be there to greet you from our own booth at Exposition Headquarters in the Conrad Hilton Hotel.

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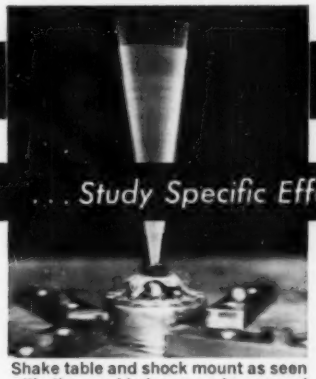

Shake table and shock mount as seen with the unaided eye under normal lighting. Mass, mounted on shock mount produces resonance at 1000-cycle vibration rate. Horizontal displacement of shake table is 1/8 inch.

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SS-10

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THE FUTURE SHOWS

Chicago, Ill. *October 17–21*

Forty-Eighth Annual National Safety Congress and Exhibit (Conrad Hilton, Pick-Congress, Sheraton Towers, Morrison, and La Salle Hotels). R. L. Forney, Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Detroit, Mich. *October 24–27*

Sanitation Maintenance Conference & Show (Sheraton-Cadillac Hotel). Gerard J. Riley, Executive Secretary, Institute of Sanitation Management, 101 W. 30th St., New York 1, N. Y.

Pittsburgh, Pa. *October 26–27*

Twenty-Fifth Annual Meeting of the Industrial Hygiene Foundation (Mellon Institute). Dr. H. H. Schrenk, Managing Director, Industrial Hygiene Foundation, 440 Fifth Ave., Pittsburgh 13, Pa.

New York, N. Y. *December 12–15*

Industrial Building Exposition & Congress (Coliseum). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Chicago, Ill. *January 23–26*

Twelfth National Plant Maintenance & Engineering Show and Conference (International Theatre). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Philadelphia, Pa. *March 1–2*

Twenty-Seventh Annual Regional Safety-Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, Executive Director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia 7, Pa.

Fort Wayne, Ind. *March 14–15*

1961 Northeastern Indiana Safety Conference and Exhibit. Ivan A. Martin, Manager, Safety Council, Chamber of Commerce Bldg., Ft. Wayne, Ind.

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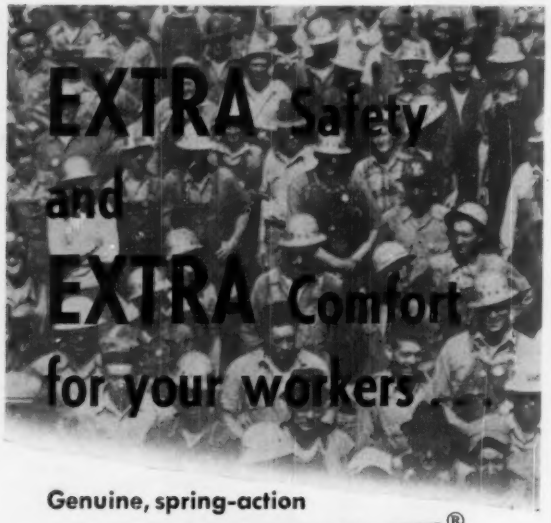

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Through Accident Prevention:

Personal Protective Equipment 11
Safety Shoes 14
Machine Guards 16
Leg Protectors 21
Hard Hats 25
Fog Light 26
Test Gauge for Breathing Apparatus 67
Insulating Link for Hoists 68
Emergency Safety Rungs for Ladders 69
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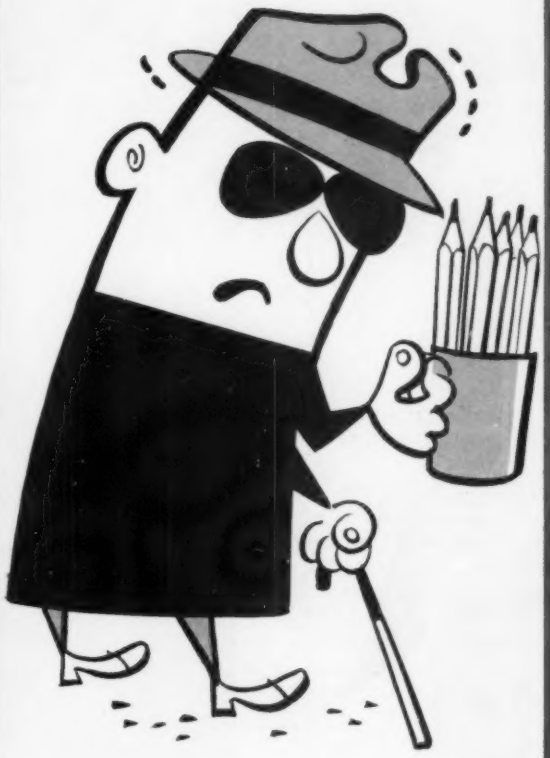
We have all the STONEHOUSE SAFETY SIGNS we need...

...but ONE!



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Stonehouse SIGNS
"Signs Since 1863"

Play it safe in your plant with accident-prevention signs. All Stonehouse Signs are made of enduring, tested materials and designed in accordance with American Standard Specifications. MAIL COUPON TODAY FOR FREE, FULL-COLOR, 64-PAGE CATALOG.

Stonehouse Signs, Inc.
Department 410
9th & Larimer Streets • Denver 4, Colorado
Send me your free 64-page catalog of Safety Signs and Tags.

Name _____

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Company _____

Address _____

City _____

State _____

(For details, use Key # X-8 on card on page 1)

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NEW SAFETY and WORK SHOE SOLE BY QUABAUG

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Combined for Protection against

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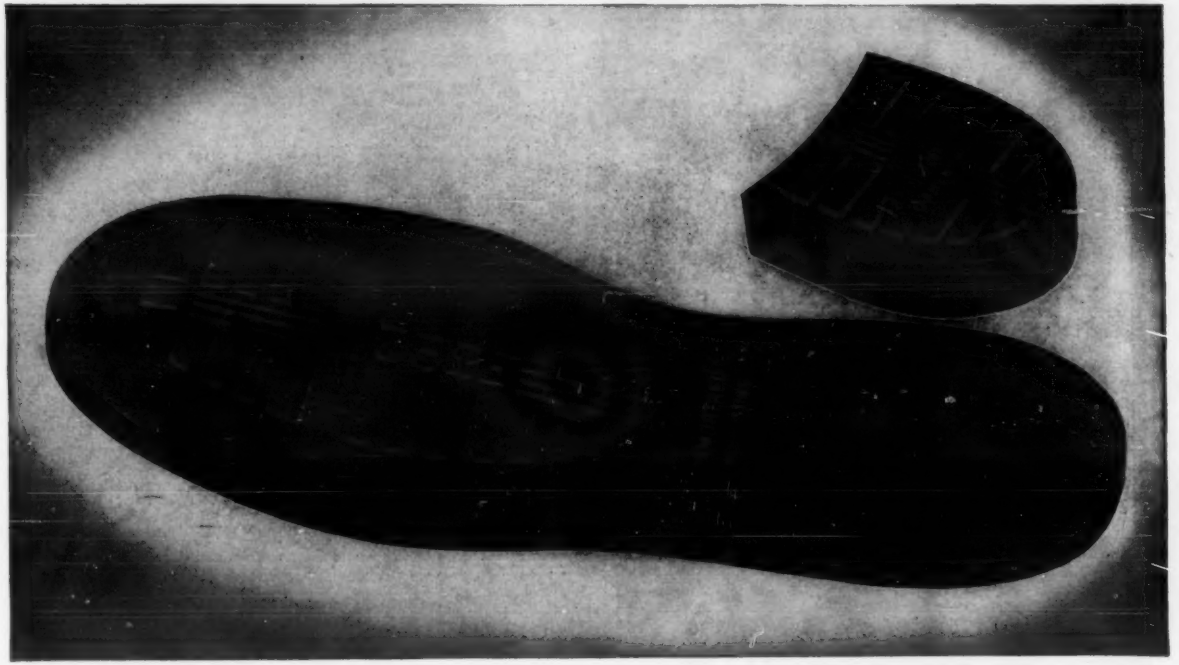


(For details, use Key # X-9 on card on page 11)

ANOTHER FINE PRODUCT BY QUABAUG—CRAFTSMEN IN SAFETY, WORK and DRESS SHOE SOLES

There is no short cut to quality

MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

Safety equipment saved these three employees from serious injury. U. S. Metals Refining Co. publicized their safety awareness in using safety equipment on the job with bulletin board posters shown below.

WE PUT SAFETY OVER!

by **JOHN A. TURK**, Director of Safety & Industrial Health
U. S. Metals Refining Company, Subs. of American Metal Climax, Inc.
Carteret, N. J.

Today, when so many Safety Engineers are plagued with the need for "selling" safety to the general staff, their personal dedication to accident prevention is no answer to the problem.

Shelves loaded with protective equipment and bulletin boards with safety posters and warnings will never build up that wholehearted active cooperation without which a safety program is doomed to failure, or at best, only partial success.

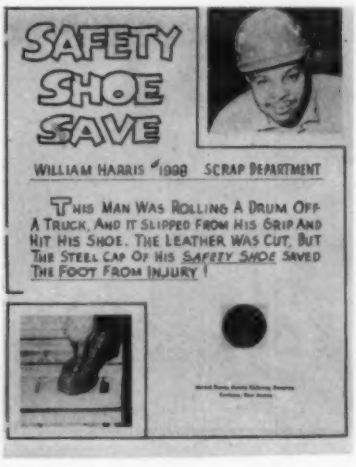
Recognizing the vital role of the man at the bench and the furnace in making the accident curve go up or down (and ours had been going down) our top management sought a way of transferring its own safety sincerity to every single man on the job. If actors in a play give their best under the stimulus of applause, so does the industrial employee under the stimulus of a pat on the back, contribute to the overall accident prevention picture. When that pat takes the form of tangible recognition, the safety movement in general has made still another convert and costs come tumbling down.

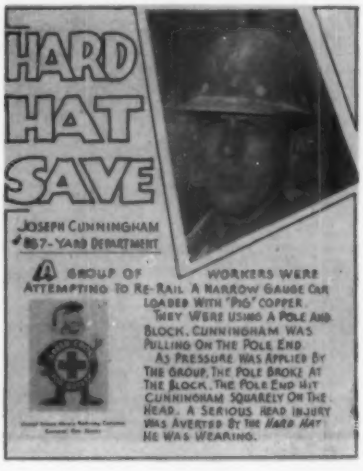
In looking around for an ideal way of paying tribute to safety-minded employees, and thus setting an example for the entire work force, our company decided to sponsor a celebration to which, for the first time, wives of the award recipients were invited to witness a special honor bestowed upon their husbands.

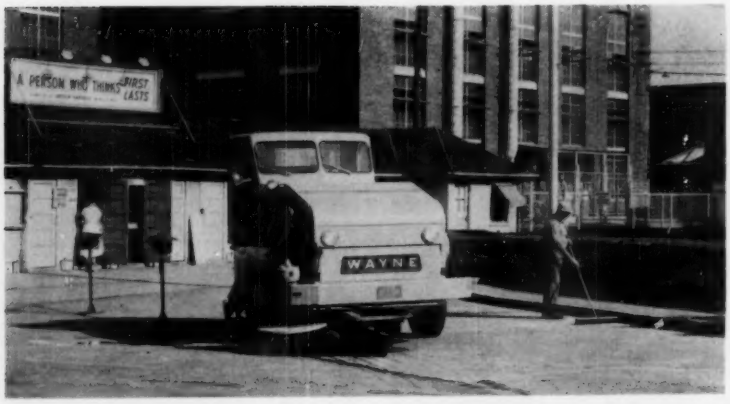
(Continued on page 21)

Here's how U. S. Metals Refining Co. dramatized employees' safety achievements.

GOGGLE SAVE
J. RING-No 389
TANK HOUSE
ON SATURDAY - JAN. 9, 1960 AT 1:10 PM. THIS MAN, A CIRCULATOR IN THE TANK HOUSE, WAS CUTTING IN SECTION No 30. ON No 5 FLOOR NORTH. HE WAS TAKING THE LOCK OFF THE SECTION. THE OPEN CIRCUIT CAUSED A LARGE ARC WHICH STRUCK THE MANS EYE PROTECTORS.
THESE GOGGLES SAVED HIS EYE FROM A SERIOUS BURN

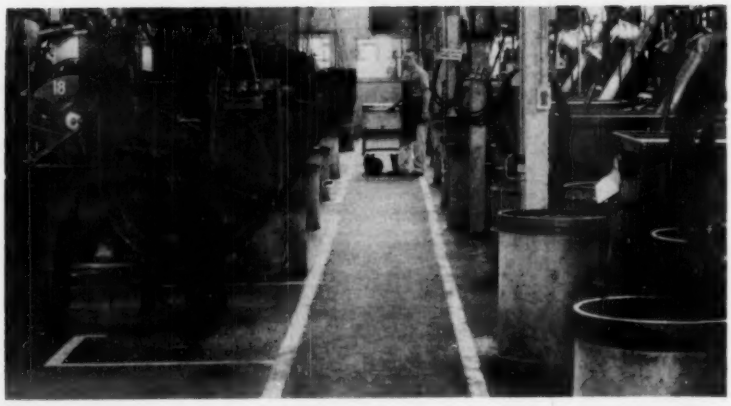

SAFETY SHOE SAVE
WILLIAM HARRIS #1998 SCRAP DEPARTMENT
THIS MAN WAS ROLLING A DRUM OFF A TRUCK, AND IT SLIPPED FROM HIS GRIP AND HIT HIS SHOE. THE LEATHER WAS CUT, BUT THE STEEL CAP OF HIS SAFETY SHOE SAVED THE FOOT FROM INJURY!


HARD HAT SAVE
JOSEPH CUNNINGHAM #807-YARD DEPARTMENT
A GROUP OF WORKERS WERE ATTEMPTING TO RE-RAIL A NARROW GAUGE CAR LOADED WITH "PIG" COPPER. THEY WERE USING A POLE AND BLOCK. CUNNINGHAM WAS PULLING ON THE POLE END. AS PRESSURE WAS APPLIED BY THE GROUP, THE POLE BROKE AT THE BLOCK. THE POLE END HIT CUNNINGHAM SQUARELY ON THE HEAD. A SERIOUS HEAD INJURY WAS AVERTED BY THE HARD HAT HE WAS WEARING.



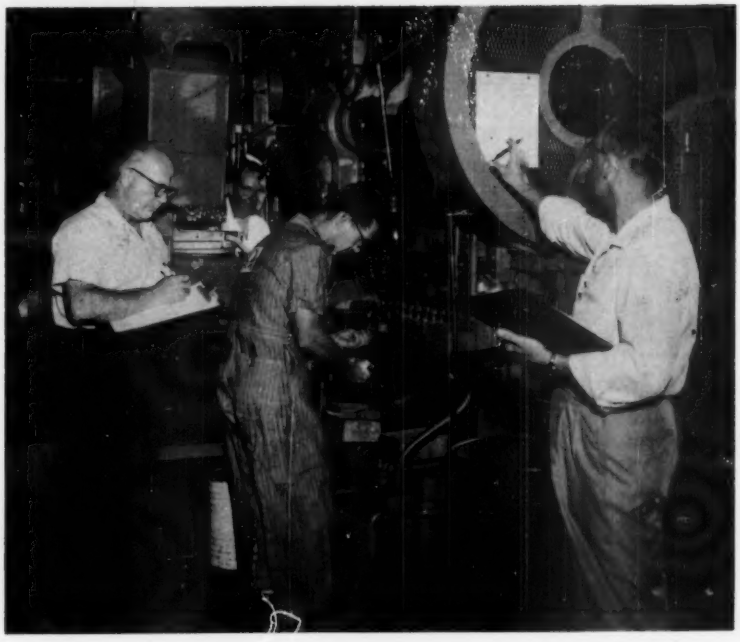
Neatness begins at the front gate where the walks and street are swept several times daily. In addition to indicating the housekeeping standards set within, such attention helps plant be a "good neighbor" in the community.

Good Housekeeping Means Safety



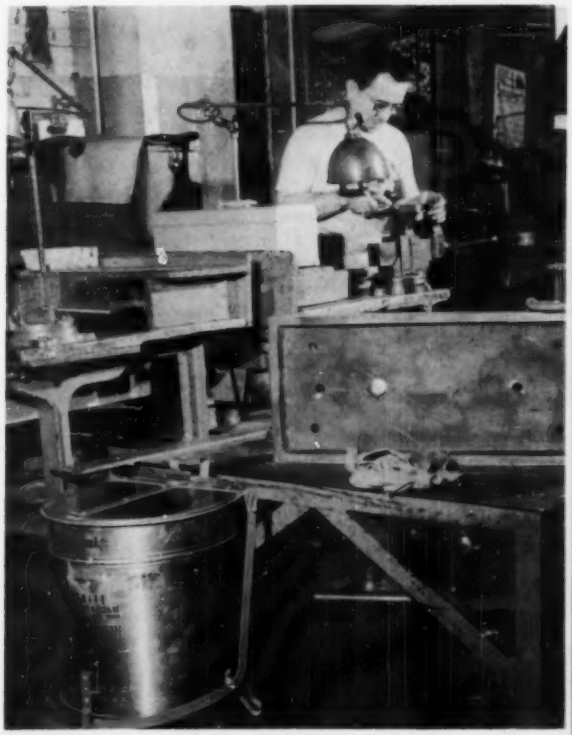
A neat and orderly place to work is a safe and pleasant place to work. But good housekeeping in an industrial plant cannot be left entirely to the initiative of employees. It also takes thoughtful planning, as shown in accompanying pictures of the East Alton, Illinois, plant of the Olin Mathieson Chemical Corporation.

ABOVE: A surprising number of safety hazards are removed when aisles are kept clear and when waste receptacles are used to keep the areas around machines uncluttered. Neatness on the job is a contribution each employee can make to his own and his fellow workers' safety. Typical of the many well kept production departments is this view of Empty Shell Department.



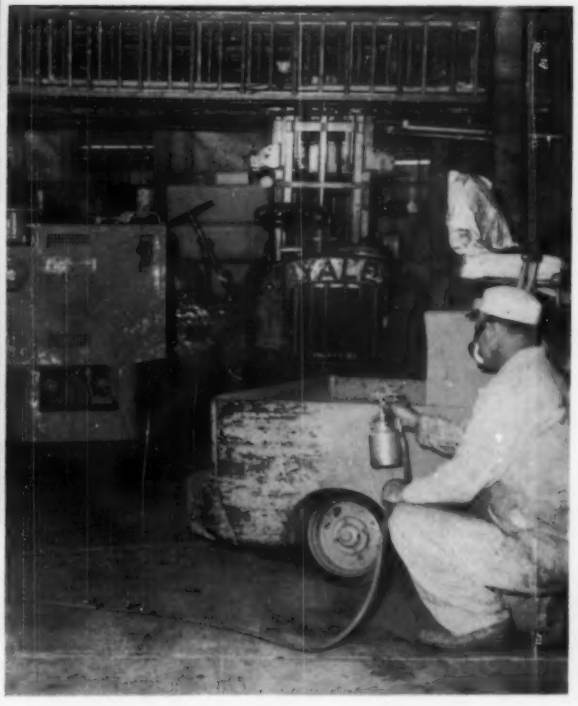
Frequent inspections help keep housekeeping and job safety standards high. Supervisors and foremen of Fabricating and Cupping Depts. comprise inspection teams that make periodic area tours.

Special effort is required in many departments to achieve neat and orderly surroundings. Such a department is Fabricating Inspection which contends with constant movement of material and backlog. Note well arranged boxes and aisles.



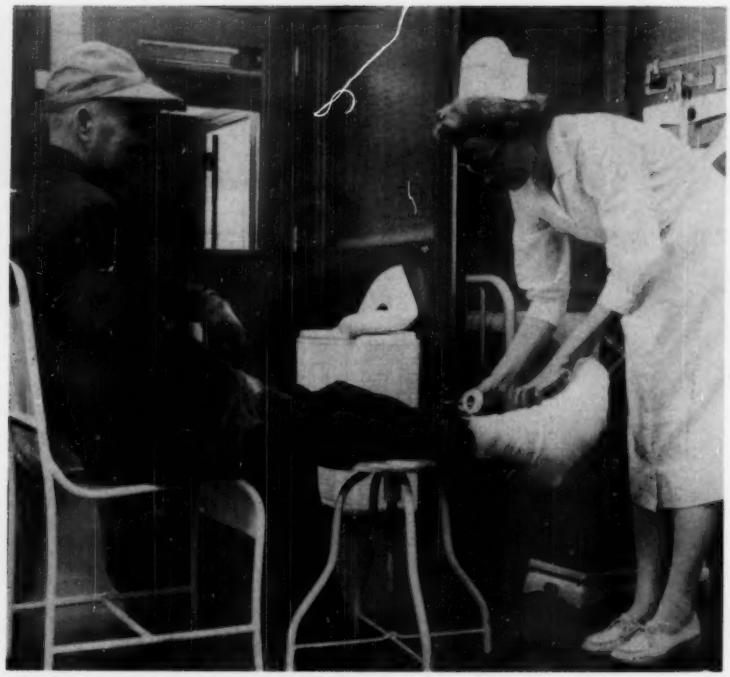
ABOVE: Special equipment which combines neatness and safety is provided in many departments. An example is the safety can shown at lower left in the picture. Used to store oily rags, the cans eliminate the danger of fire while helping to keep work areas uncluttered at the same time.

BELOW: Much of the facilities and equipment get painted during the summer shutdown. Here, the paint shop spruces up one of the tractors. Repair and maintenance work put plant buildings and equipment in shape for production.



Gimmicks and Hoopla Boost Safety Shoes

Dayco Corporation Has Mobile Store Bringing Safety Shoes Direct to Employees



Virgil Brandenberg, one of the "volunteer" injured, gets his costume fixed up by the company Nurse Vera Dullaghar before the show hits the road.

Like championing Motherhood, hating the devil, and boosting the home team, good safety habits should be second nature to American workers. Unfortunately, most people in industry must be "sold" on the idea of self protection.

Take the matter of safety shoes. Nowhere else can so little do so much—providing workers have them.

Getting employees enthusiastic about safety shoes was the problem faced by Ray Hart, safety director for the Dayco Corporation (formerly The Dayton Rubber Co.). Keeping shoes in the box was excellent for storing them but did nothing to convince the average worker he should be wearing them.

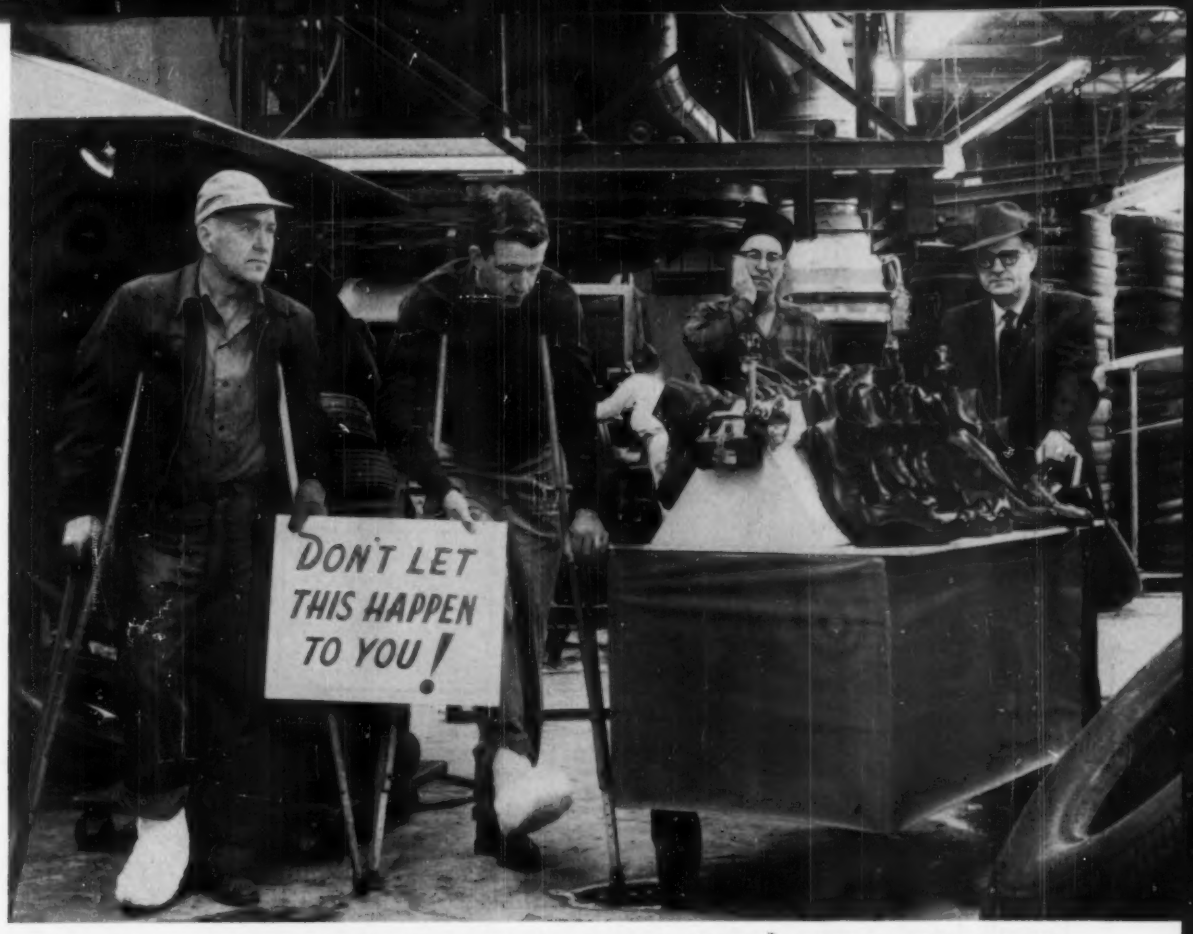
"Get them out of the box and right in front of every worker," reasoned Hart, "and we'll have more people buying and wearing safety shoes."

Hart tried his theory in the plant of the Dayton Tire and Rubber Company, a division of Dayco Corporation. He picked the Ohio plant because it was one of the largest in the corporation and because the type of work made wearing safety shoes a definite asset in preventing injuries.

A couple of dollars worth of lumber, some flexible plastic sheeting and a can of white paint transformed an ordinary hand truck into an attractive mobile shoe store. Not only the usual steel safety box toe dress shoes were shown but protective shoes of all types and styles were mounted on display racks. Among these styles were shoes with full soles featuring a series of resilient rubber corrugations, based on a scientific principle tending to reduce fatigue by absorbing shock. The multi-surfaces of the sole provide a surer grip on slippery surfaces, with inter-spaces to air-cool the feet on hot floors.

This was just one of a wide variety of modern soles that were shown in the safety shoe display, for the advancements in soling for shoes have been as marked as the improvements in safety shoes themselves. Various types of new soling materials, coupled with new sole designs, are giving better wear, usage, comfort and underfoot security under many different conditions.

Advance notices on plant bulletin boards called attention to schedules for visits to various departments. Whenever possible, the visits were timed to coincide with smoke breaks, not because of production problems but to test the effectiveness of the idea. If some men *even looked* at the shoes on their own time, reasoned Hart then the idea was well worth the effort.



Moving through various production departments, the safety shoe cart and the bandaged volunteers attract attention.

Orders for safety shoes were taken directly from the cart as employees in each department looked over the display of all styles of safety shoes.

Getting safety shoes out of the boxes, away from the company shoe store and bringing them directly to the workers represented a new departure in itself. But it still wasn't unusual enough.

Razzle-Dazzle Too

What the idea needed was a little of the old-fashioned traveling medicine show type of hoopla. There had to be an eye-catching, bell-ringing grand entrance into each department to overcome the normal torpor so characteristic of workers everywhere during their smoke break.

The brightly painted "Shoe Cart" was attractive, but too static to fully catch the eye. Two red flashing lanterns with self contained batteries were mounted on the

(Continued on page 25)

MACHINE GUARD SERIES
other articles Nov. & Dec.

by **JOHN A. DICKINSON**
Consulting Engineer, Member ASSE
Bethesda, Md.

Nearly fifty years ago, with the passage of state compensation laws, insurance took a new form—workmen's compensation against injuries—and the larger insurance companies started systematic inspections of the insured's premises. These inspections resulted in recommendations for elimination of obvious hazards. In 1913, the Rating Bureau was formed. Schedules were prepared for each industry with a system of credits or debits for plants that were better than normal or below normal from the standpoint of physical hazards. Credits as high as 40 percent of the base rate might be earned with a perfectly laid out and guarded plant.

For the first time, a guarded machine could result in a direct financial gain. In fact, most of the credits for guarding were so worked out that, if the standards were met, the cost could be earned in premium savings in from five to seven years. Furthermore, some of these early standards were amazingly modern by present-day criteria.

Within a few years, the machine hazard was reduced tremendously. Large corporations began to write purchase specifications that called for completely guarded machines. Existing machines were guarded, stairs and elevated walkways were railed, better lighting was installed, and obvious hazards were eliminated.

Guarding Today

Most of the machine tool builders, if they had not previously done so, brought out machines in which gears, shafts, etc., were completely enclosed. Unfortunately, there was a large market for machines without guards. For the past dozen years, the National Safety Council's Industrial Conference has had a committee working toward the ultimate of a machine fully guarded at the place of its manufacture. While much has been accomplished, some insist that the small plant wants an unguarded machine because of the lower initial cost; although it has been pointed out that the manufacturer of a machine can make guards to fit it at a lower cost than the purchaser can.

Some small factory owners contend that a machine can be equipped with guards at relatively little cost using mechanics between jobs when they might otherwise be idle and utilizing material that ordinarily would be sold for junk. While this argument has considerable merit, it has one very serious defect. A new machine, purchased at a cost of several thousands dollars will, in all probability, be put to work as soon as it is installed. The necessary man-hours or materials for guarding may not be available for weeks or months. Almost anyone in the insurance inspection field must have run into such cases repeatedly.

"Yes, we're going to guard that machine but we've been so busy we haven't had a chance to get at it, but we'll do it the first time the work load slacks off a bit."

Doesn't that sound familiar?

Another growing field for low-priced unguarded machines is the

MACHINE SAFETY TOMORROW

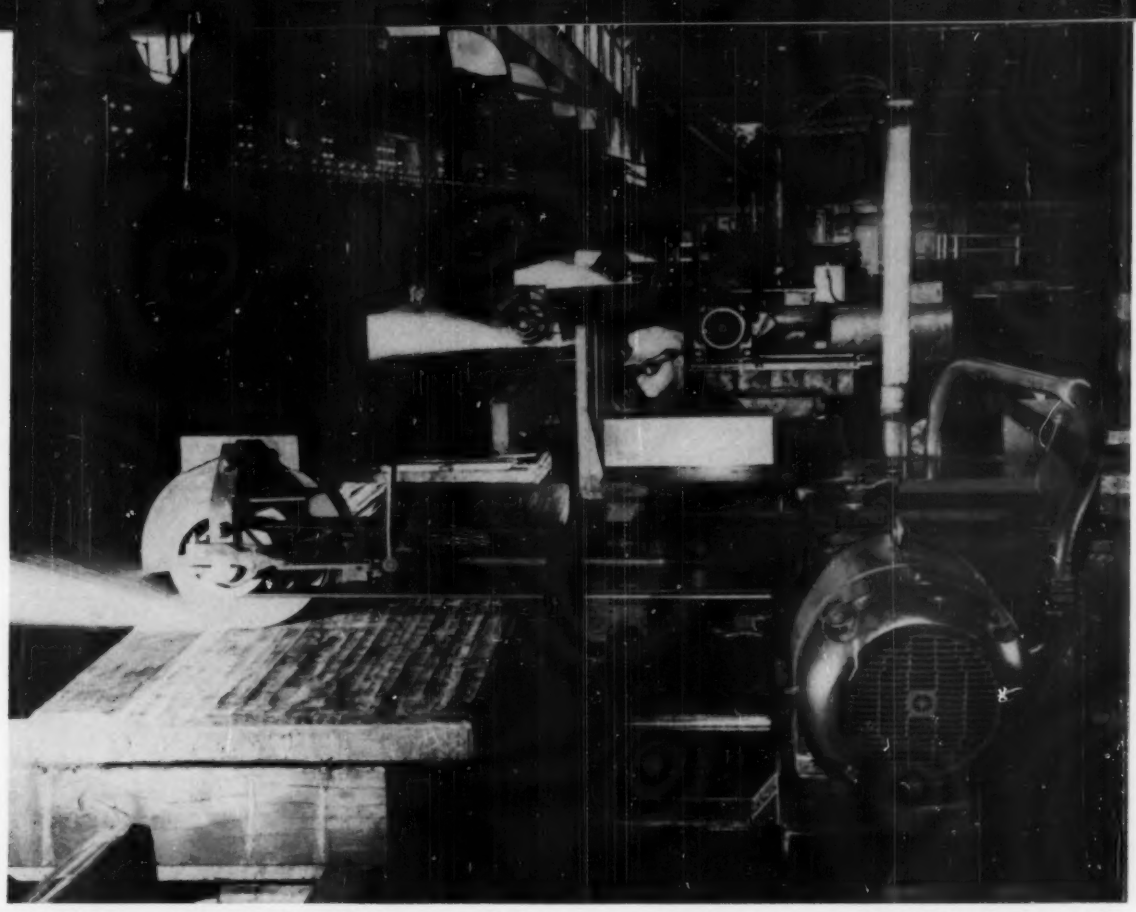
1. More and more automatic equipment excellently guarded, with the operator moved further and further from the point of operation, or perhaps made an ambulatory supervisor to a whole group of machines. This number of operators will not increase as fast as production does.

2. A group of highly trained maintenance men who will be subjected to new hazards in addition to those of the old-fashioned machine shop. This group will become increasingly numerous.

3. Small independent shops or tool and die shops within large industry. Here, we should work insofar as possible for the machine tool fully guarded by the maker.

4. The home workshop group. Here, in addition to working with machine tool manufacturers, safety men should wage an educational campaign using "Off-the-Job" safety training to reach those still working. Magazine articles and talks to retired personnel are clearly needed. It might be well to stress the need for guarding home workshop equipment as well as the need for eye protection and, in some cases (as wood turning and sanding), the desirability of respiratory protection. The home workshop group may be expected to increase rapidly, and already presents a real challenge to the safety engineer.

Future



COMING UP . . . MORE MECHANIZATION: Here a steel company worker operates the controls of hydraulic-electric billet grinder, replacing the manually operated swing grinder. He is far away from point of operation and behind safety glass.

Trends in Machine Safety

home workshop. Woodworking power tools, small machine lathes, drill presses, milling machines, etc., are selling at an ever-increasing rate. As a general rule, such equipment does not come under the scope of labor legislation and, even if it were to be included, one would be faced with the old principle of "a man's house is his castle." In the list of home accidents, home workshop cases are beginning to show an ominous increase.

The only remedy would appear to be education of individual home-shop owners, plus an attempt to get the manufacturer of small home-shop machines to sell nothing but fully guarded equipment.

Effects of Automation

Looking to the future, there is one really bright spot in the picture. Many manufacturers of modern machines do not build unguarded units because their machines are so large and expensive they are sold only to the large corporations who specify fully guarded machines. In fact, many such machines are tailor-made for a particular job and are rapidly becoming semi- or fully automatic; the operator is no longer located at the point of operation but is watching the process through a safety glass or plastic window, or in some cases, in a mirror.

For example, there is a six-position forming press in one of the plants of a large manufacturer of fighter planes. Six girls, seated around the press (and at least 5 feet from the point of operation), place the stock between centering pins over the half die (which by the way was made of something that looked like dense pressboard), and then press a button to move the assembly under the platen which carries nothing but a stack of rubber blankets.

The press descends slowly, then lifts; the flat sheet of metal is now a beautifully streamlined nose cone. The whole assembly returns to the operator who removes the formed piece and places a new blank in the half die. The most amazing thing about the operation is the fact that each girl is forming a different piece—sections of the leading edge, wing tips, etc.—yet the rubber blanket assembly serves them all. The press is in constant operation, yet each girl has ample time to remove the formed piece and insert a new blank.

Committee B11, Safety Code for Power Presses, recently took a most progressive step. The new draft of that code will not consider any

press to be fully guarded unless it is imposible for the operator to get his hands between the dies.

Safety Feeds

Strip, chute, and dial feeds are becoming more and more common in punch-press work. As we look forward, we see more and more machine work being done without any effort on the part of the operator except perhaps putting the stock in the machine. Turret lathes or equivalent mechanisms on other machine tools will perform all of the needed operation. All gaging will be done by "go-and-no-go" gages, by photo-cells, by capacitors, by sensitive weighing devices, by X-rays, by ultrasonics, by measuring the radioactivity transmitted through the piece from a standard source (as is now being done in the precision rolling of steel and nonferrous metals), or by methods as yet undreamed of. One man may operate a number of machines, but even then he will have little to do. If a machine breaks down or gets out of adjustment so that the product will not pass inspection, the machine will shut down automatically.

Assembly Line Techniques

Assembly lines, where the product is assembled as it moves along, have been utilized to assemble many things, from automobiles to switchboards. Here is a recent variation on the assembly line technique: A large casting is placed in front of one of a dozen seated men; tools are carried on a large revolving disc like a king-size lazy susan, and each man successively performs a dozen or more machining, grinding or polishing operations without leaving his seat. There are as many operating positions as there are tools, so that all equipment is in use almost all the time. Obviously, each operation should take about the same length of time, or part of the time some of the equipment will stand idle. The same system could well be applied to the assembly of automotive parts where the "lazy susan" might carry cotter pins, nuts, etc., as well as power-torque wrenches and power screwdrivers.

As the automatic functions become more numerous, the machines obviously will become more complex. They will require more servicing by expert mechanics who, of necessity, will have to have a working knowledge of such things as electronics and radioactivity. Many adjustments will have to be made with the power on and the machine in actual operation; but, in these cases, the adjuster will probably be in the center of things and will be faced with hazards that the operator is not exposed to in normal operation.

Maintenance Hazards

A number of years ago, there was a popular song entitled, "Who's Taking Care of the Caretaker's Daughter While the Caretaker's Busy Taking Care?" It begins to look as though the man we will have to take special care of will be not the machine operator, but rather the adjuster or maintenance man who is taking care of the machine; and the hazards he faces may be greater than those that the machine operator faced a few decades ago. Certainly, he will be faced with such things as X-ray, radiant energy, supersonics (the physiological effects of which are not as yet too well known), and in addition, the mechanical hazards of making close adjustments of a moving machine.

Old Problems Still With Us

On the other hand, we will always have the small shop with us. For special work of the small-lots production, the large plant is too cumbersome and too expensive to change over.

Then too, there are many small specialties that can be handled more cheaply in a small specialty shop. For example, it is reported that no major automobile manufacturer produces his own nuts and bolts.

Even in the largest plants, we will still find tool and die rooms with old style lathes, shapers, millers, drill presses, etc.—all, of course, well guarded.

From an address presented at the 47th National Safety Congress. Picture by courtesy of American Iron & Steel Institute's "Steelways."

Safety's Big Show

Three hundred sessions on all kinds of safety—from aerospace to wood products.

Nine hundred program participants telling of their safety problems and how they've solved them.

Hundreds of exhibits of safety devices and products.

These are but a few of the attractions being featured at the forthcoming annual convention of the National Safety Council—the 48th National Safety Congress, which is being held in Chicago, Oct. 17–21.

The convention takes up virtually all the meeting space in Chicago's largest downtown hotels. Some 12,000 safety specialists from the United States, Canada and several foreign countries are expected to attend "the World's Biggest Safety Show."

Convention Theme

Theme of the convention is "Safety . . . Everywhere . . . All the Time," an attempt by the nonprofit, nongovernmental safety council to stress the around-the-clock need for practicing safety.

"Safety," the Council says, "is not something you put on and take off like a work uniform. It is a 24-hour-a-day responsibility. A worker injured out in traffic or while having fun at a recreation spot is just as lost to his company as if he had been injured at a machine."

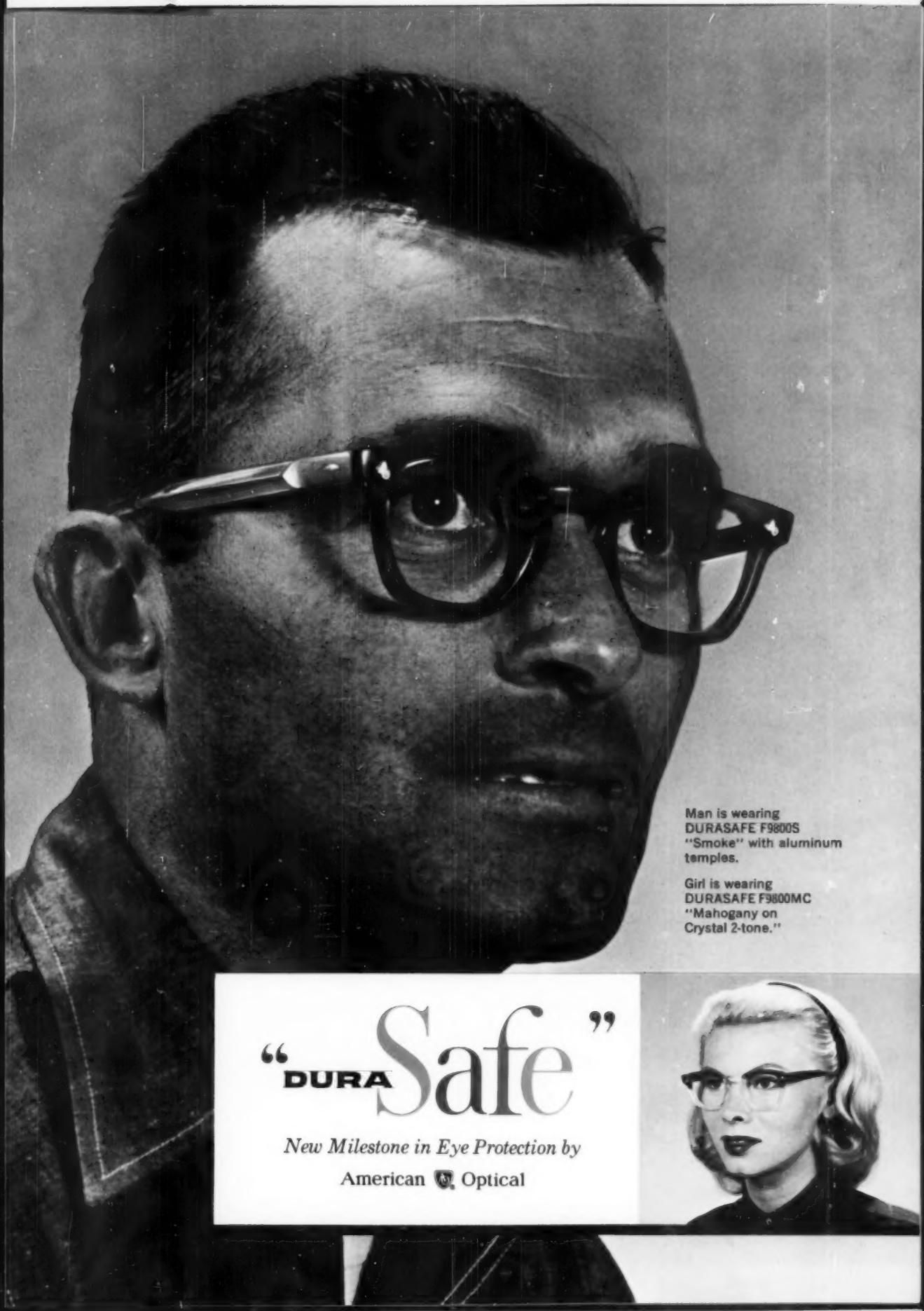
Speakers at the Congress include persons well known in their industrial fields, as well as such nationally known persons as the following:

Gen. Alfred M. Gruenther, president of the American National Red Cross, Washington, D. C., who speaks at a banquet Tuesday evening, Oct. 18, on "American Responsibility in a World of Missiles and Misunderstandings."

Sen. Robert S. Kerr (D.-Okla.), partner in Kerr-McGee Oil Industries, whose discussion covers management's responsibility for safety.

Brig. Gen. Walter E. Arnold, director of flight and missile safety research, Norton Air Force Base, Calif., whose subject is the safety factors involved in firing missiles.

For details on products shown on opposite page, use Key # X-10 on card on page 1. ⟶


Man is wearing
DURASAFE F9800S
"Smoke" with aluminum
temples.
Girl is wearing
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"Mahogany on
Crystal 2-tone."
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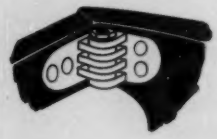
Always insist on AO Trademarked Safety Products.

Featuring these outstanding safety advances



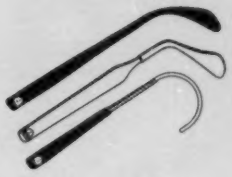
7 Barrel Hinge — 40% increase in strength at the most vulnerable spot — where frame and temple are joined.

Duragrip Screw Construction — Keeps frame temples tight permanently, screws cannot fall out.

Wider End Pieces — more strength because of greater temple surface.

"Lock-A-Lens" — New safety ridge locks lens in frame — locks trouble out.

"Breeze Catcher" — New safety-comfort in non-reflecting mesh side shields.



Wider Frame Temples — stronger (minimizes breakage), more comfort, conform better to head contour.

Much Sturdier Frame — wider for extra strength.

Your Surest Protection . . . AO SURE-GUARD Glasses

S-1058

9☎60

We Put Safety Over
(from page 11)

Our management directed us to make this a distinguished and memorable affair, so we prepared engraved invitations to the safety awards dinner for the presentation of heroism medals to employees who helped save the lives of fellow workers. Medals and certificates of honor were presented by the Joseph A. Holmes Safety Association, sponsored by the U. S. Bureau of Mines.

U. S. Metals Refining Company employee, James Mester, received the medal for "exceptional courage at great personal risk by plunging into a water-filled pit to rescue another employee who had been seriously burned in an explosion."

Employee John Sroka won a medal for "quick action and considerable risk in pushing a worker away from a direct line of a falling piece of lead sheet, thus saving his life or preventing serious injury."

During the evening and in the presence of their wives, "Wise Owl" Safety Awards were given to nine men whose eyesight had been saved from permanent loss through the timely use of protective goggles. Four men were honored with membership in the "Turtle Club" for wearing hard hats in the presence of danger; and twenty others received "Golden Shoe" awards for their prudence in wearing safety shoes, thus preventing serious foot injuries.

In our scheme of things, the cause of better human relations was given a tremendous push as the result of this company sponsored function. Officers of our union and the international representatives of the labor union paid tribute to management for its constructive contribution to safeguarding all employees against accidents. These accidents inevitably lead to an aftermath of tragedy and financial losses for everyone.

The net result of this award presentation has been a heightened interest in the benefits of safety. By capturing the imagination of the family, the man on the job has been still more receptive to the safety appeal. He is thus inspired to clothe himself in the mantle of safety provided by his company management and no longer dismiss the safety message as tiresome "preaching."

When other safety directors ask how a safety program can be put over, the question can be answered with another question: **"Are you doing a real selling job?"** If not, the responsibility is yours to provide, not only the proper safety equipment for the job, but that pat on the back in the form of public recognition for outstanding safety achievements.

Advanced management is responsive to any suggestions that will make its plant a safer place to work.

We are constantly improving our program. We like to apply a theme of human psychology that one song writer very ably covered when he wrote:

"Brighten up the label, it's the proper thing to do,
Polish up the old that's good and make it look like new."

It requires much effort to discard or amend the old safety program that has been in effect and seemingly works so well, for a new one. Maybe you should not discard it, but you should make soundings to see if it has fallen prey to monotony and ineffectiveness. It may have been a fine program two years ago, but remember—the end result is the human response to it, and this result will fail to vibrate if the repeated impulses are sameness.

For details on products shown on opposite page, use Key # X-11 on card on page 1. ←

A SAFETY IDEA

Attention: Postmen, Meter Readers and Delivery Men

Man's best friend isn't always the best friend of meter readers, mailmen and delivery personnel. From the dog's point of view, the man who is doing his job may seem to be an intruder on his private domain.

The Port Arthur, Texas, district of the Southern Union Gas Company recently came up with a solution to the problem of protecting its meter readers from bites by unfriendly canines . . . plastic leg protectors worn under the trousers. The leg guards were made by measuring each man's lower legs and shaping the plastic to fit. The plastic shield covers just the back and sides of the leg, since most dog bites are from the rear. Straps across the front of the leg hold the protectors in place. For comfort, ventilation holes are drilled through the plastic.

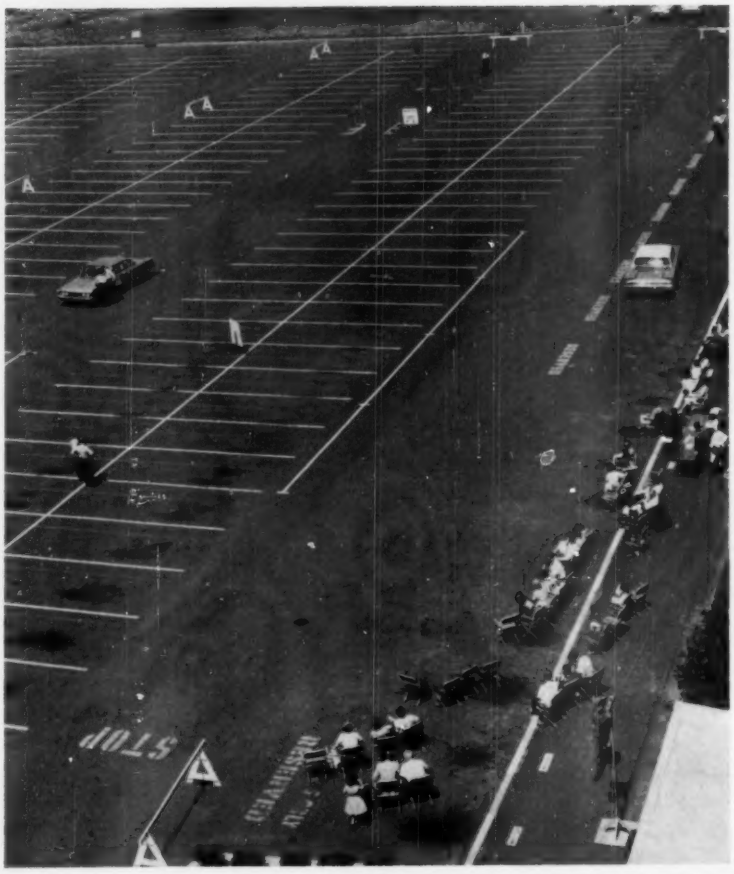
A neat solution to an old problem!

Pictures courtesy of Southern Union Gas Co. and McDougle Brace & Limb Co.

THE CRUX OF OFF-THE-JOB DRIVING ACCIDENTS

During the past five years, the Bayway Refinery of Esso Standard, Division of Humble Oil and Refining Company, has attacked the problem of off-the-job accidents because of the manpower loss and the resultant costs, but more significantly because of our belief that employees should "Be Safe Around the Clock" and that an off-the-job safety program would be beneficial in reducing in-plant industrial injuries.

Off-the-job disabling accidents have been reduced from 263 in 1956 to 59 in 1959, while the frequency rate per million man-hours dropped from 17 to 6.6. Results in 1960 so far show a frequency slightly over 4. At the same time, disabling industrial injury frequency has been cut to 1.25 and nondisabling industrial injury frequency has been cut from 189 injuries per million man-hours in 1956 to less than 40 in 1960 as a result of our over-all safety program.



Skill tests were conducted on Saturdays.

The Problem

As off-the-job accidents were decreased, it became obvious that little progress was being made in the reduction of traffic accidents, which

Awards are presented to the winners of the tests showing driving skills.

SAFETY:

by **WILLIAM J. KERNS**
Safety Advisor
Bayway Refinery, Linden, N. J.
and
HERBERT J. STACK
Consultant
Esso Safety Foundation and
Staff Member, N. Y. University
Center for Safety Education

Instructor demonstrates accident sequence of falling blocks on table.

For discussion periods, three microphones were used at convenient places.

actually increased from 18 percent in 1956 to 34 percent of all off-the-job accidents in 1959. During 1959, of the days lost from off-the-job accidents, 54 percent were attributed to traffic accidents. The Central Safety Committee of the Refinery, whose Chairman is also the Refinery Manager, decided early in 1960 that a traffic accident prevention program should be offered **to all of our 2,350 employees and to members of their families who are drivers.**

The Refinery first secured the cooperation of the staff of the Esso Safety Foundation, which has been active during the last five years in the development of driver education courses for high school and college teachers, as well as institutes for enforcement officers, judges, and prosecutors. Richard Tossell and Dr. Herbert J. Stack of the staff were assigned to work with representatives of Bayway in the development of this training program. A pilot course outline was prepared and a short course was offered to the engineers, draftsmen and stenographers in the Mechanical Design Division as part of their safety activities for tryout and evaluation. The outline was then revised and detailed plans drawn up for offering the course to employees and their families.

Securing Cooperation

The New Jersey Division of Motor Vehicles, the New Jersey State Police, and the State Safety Council enthusiastically assisted the program. The Motor Vehicles Division

assigned personnel from the Bureau of Traffic Safety, as well as a Traffic Engineer, and numerous Motor Vehicle Inspectors to serve on panel discussions and to operate psycho-physical testing units. The New Jersey State Police and the New Jersey Safety Council also assigned representatives as instructors and to lead panel discussions, in addition to other experts in the field.

The program was publicized to employees and their families through the Refinery newspaper, posters, bulletin boards, letters to the home, and in the local press. Since the course was voluntary and was to be held from 7:30 to 9:30 p.m. once each week for four successive weeks, there was some question as to how many employees would respond. It was decided that employees, their wives, and members of their families would be served dinner in the Refinery cafeteria before each session. A merchandise prize was offered to each person attending all four sessions.

Participants who scored highest in the Knowledge Test given at the last session, were eligible to compete in a "skill rodeo" held on a Saturday on one of the company parking lots. Seventy competed, with first, second, and third place winners receiving cash prizes. This combination of incentives, plus the popular interest generated, brought out an attendance of 600 for the first two courses completed in May, with approximately the same number in June. It is interesting that attendance only dropped off 2½ percent throughout the four sessions.

Outline of the Course's Four Sessions

Four two-hour sessions were included, covering some of the basic principles and practices of safe driving. Three microphones were installed in the auditorium so that problems could be discussed by members of the class. The discussion technique was used rather than lectures in presenting the subject matter. As will be noted in the following outline, visual aids including motion pictures, film slides, and transparencies were widely used.

FIRST SESSION

- Informal greeting to group by Management
- Purpose of course and seriousness of traffic accident problem outlined by Bayway Coordinator
- Motion picture, "And Then There Were Four"
- Discussion of Film by an Instructor
- Intermission
- Basic causes of traffic accidents (illustrated with visual aids)
- Question and answer period, led by Instructor and representatives of State Motor Vehicle Div. & State Police
- Summarization and assignment
- Booklet, "You and Your Driving," distributed, and reading and tests assigned

SECOND SESSION

- Previous to this session, the group met for a demonstration of stopping distances by the New Jersey Safety Council including wet pavements
- Demonstration of Psycho-physical testing and significance of tests
- Film, "Chain Reaction"
- Discussion of film
- Intermission
- Improving driver attitudes—discussion (illustrated with transparencies)
- Question and answer period
- Summarization and assignment
- (Distributed 10-point safety check lists)

THIRD SESSION

- For 30 minutes previous to this and the fourth session, four sets of psycho-physical testing apparatus were operated by Motor Vehicle Division inspectors. Anyone who desired could be tested. Many participated
- Motion picture, "Freeway Driving is Different"
- Discussion of film, pointing out the important differences
- Safe driving practices and emergencies—discussion (illustrated with transparencies)
- Intermission
- Motion picture, "To See Ourselves," followed by discussion
- Improving perception in driving—discussions (illustrated with color slides on perception)
- Question and answer period
- Summarization and assignment

FOURTH SESSION

- Drinking and driving
- Things I would like to know (Question and answer session with questions submitted prior to or during the session)
  - Panel—Staff of Motor Vehicle Division
  - State Police
  - State Safety Council
  - Course Instructor
- Summarization of course
- Intermission
- Objective test on course—20 minutes
- Motion picture, "You and Your Driving"
- Discussion
- Closing remarks

Results of the Course

During May and June nearly 1,100 employees and members of their families participated in the training program. Some of these had been driving for over 40 years; others, especially the youngsters, had only a few years experience.

Responses from questionnaires filled in by the course participants indicated that the course was very well liked and just the right length, but that more time should be devoted to questions and answers from the panel of experts.

Since the course was limited to eight hours, it was necessary to select the most important subjects. The 50-item objective test administered at the closing showed an average grade of 82.5. The average for the women was only slightly below that for the men, while the average for teen-agers was slightly lower. Most of the latter had completed high school driver education courses where 30 periods are devoted to classroom instruction.

Drivers with scores of over 90 for the women and 94 for the men in the tests were invited to participate in "rodeos," which were held on a parking lot on Saturdays. Six State Motor Vehicle inspectors administered skill tests to nearly 70 drivers and cash prizes were awarded to the winners of these contests. There is no doubt that those who completed the course are much better informed about good driving practices, rules of the road, state traffic regulations, and driv-

ing emergencies. This showed up in the tests. Whether or not there will be any improvements in attitudes, which were stressed in each of the periods, remains to be seen.

Evaluation

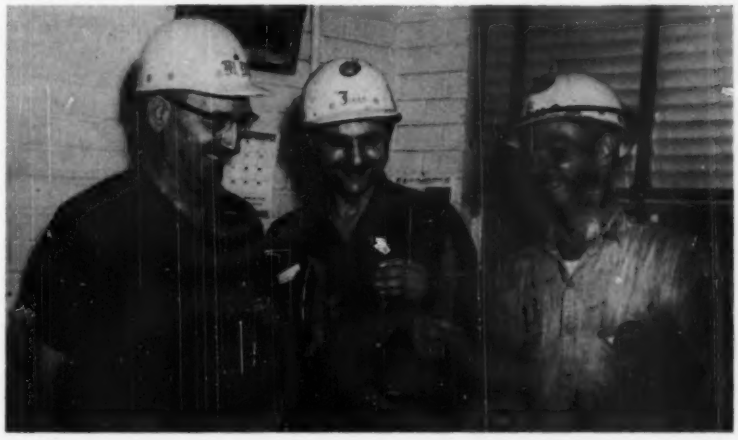
The acid test for instruction of this kind will be the effect that it may have on the incidence of off-the-job traffic accidents during the year. This remains to be seen, and officials at Bayway will be observing the records closely. There is also the unanswered question as to whether there will be some transfer of training in attitudes to reduce other off-the-job as well as on-the-job accidents.

There are still other results that are more difficult to appraise. One is the human relations value of the family group participation in an educational program. This is a rare experience in the life of any family. Naturally, the course was especially popular with the wives, for they didn't have to prepare dinner for the four evenings on which the course was in session. And their average scores on tests were almost as high as their husbands'.

Safety, and especially traffic safety, is a common denominator in which the interests of an industry and the family are synonymous. Both want to reduce preventable accidents.

Bayway is gratified in its reduction of both plant and off-the-job accidents. This record would not have been possible without the full support of management. The Refinery Manager, Mr. G. R. Murrell, who is also Chairman of the Union County Section of the New Jersey Safety Council, was a strong supporter, as were members of the safety committee and the course coordinator, William F. Sabota. This brief article only serves to highlight some of the features of the training program. However, Bayway officials have prepared a booklet outlining the details of organization and administration of the program. Copies of this are available and may be secured by addressing the Bayway Refinery, Esso Standard, Division of Humble Oil and Refining Company, Linden, New Jersey, or the Esso Safety Foundation at 15 West 51st Street, New York 19, New York.

Another Injury Checked



Safety Hat Rule Pays Off

The importance of a well-established safety program was dramatically demonstrated recently at Alan Wood Steel Company. One of the Company's iron-clad safety rules has long been that every employee wear his "hard hat"—firm plastic safety helmet—at all times while on the job. In a freak shop accident, the strict enforcement of this regulation prevented three serious and possibly fatal injuries.

Charles Sigg, Mathieu Wanamaker and Julian Meoli, all millwrights, were completing mechanical work on the floor of the strip mill rolling department adjacent to a 20-ton overhead crane. Suddenly, a load on the crane was raised through the limit switch, causing the shive wheel on the hoist to break into three pieces. The sharp pieces of steel fell 30-feet to the floor and struck each of the millwrights squarely on the head. Because they were wearing their "hard hats," they were able to report nothing more serious than a thump and the souvenir of a "close one" to Alan Wood's safety investigating team.

Today, safety measures drawn up for the entire Conshohocken plant are no more carefully followed anywhere than in the strip mill rolling department. The three millwrights and their fellow workers could not have had the importance of strictly adhering to safety procedures more forcefully brought home.

Gimmicks and Hoopla Boost Safety Shoes

(from page 15)

front and rear for visual impact. Being seen was no longer a problem, so attention was directed to being heard. An ordinary cowbell blasted through the production line noise level with an authoritative tone. It was the strangeness that drew everyone's attention. A cowbell in a factory is a sharp, alien sound—one that comes through with the vigor of a shotgun blast in a library.

One more eye-catcher was necessary. This had to be something which explained at a glance the reason for safety shoes in the first place. Crutches, a "Don't let this happen to you" sign, and several bandaged volunteers turned the trick.

When the cart entered a department with lights flashing and cowbells ringing, heads turned and workers stared in wonder. Their

eyes really popped when they saw the limping, groaning, crutch-supported trio and read the warning sign.

The Safety Shoe Special or "Hart's Cart," as the mobile shoe store was nicknamed, was a smashing success. Workers crowded around, partly to talk and joke with their "injured" fellow employees, but mostly to look over the safety shoe displays. Orders were taken at a steady pace during the initial three day period.

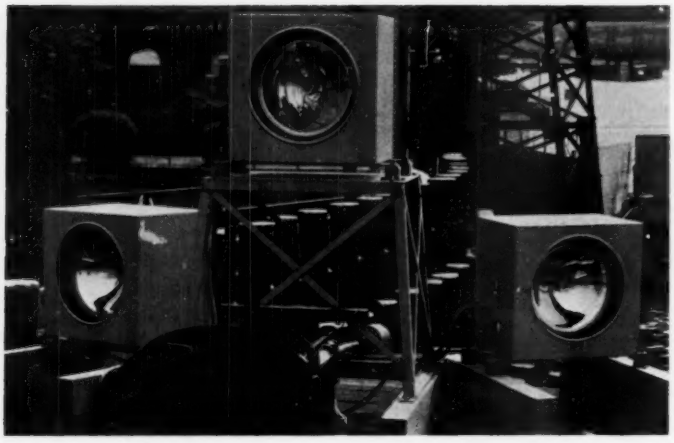
"We had to turn down many employees who wanted to buy a pair of shoes right from the wagon," Hart said. "We would have been out of business before lunch if we had made direct sales," he added.

Normally, about fifteen persons a week drop into Hart's office to buy safety shoes. In two days, more than sixty people ordered shoes from the cart.

Many employees drop by and ask for a particular type of shoe they saw on the cart. Hart figures it will be several weeks before safety shoe orders drop down to the normal rate.

"We will probably sell about 125 more pairs of safety shoes because of this stunt," he remarked. "Translate it another way and it means protection for an additional twelve hundred and fifty toes! That's good, inexpensive protection when you consider that **a single toe injury would have cost a lot more than this entire program,"** he added.

Hart and his committee were so pleased with the results that they plan to use this safety shoe promotion—with some interesting variations—at least once a year. The enthusiastic response from workers, supervisors and general foremen virtually guarantees the success of the next trip of "Hart's Cart" in other divisions of the corporation.



Light System Cuts Fog

The Army has solved a fog navigation problem that has plagued the most ancient of mariners.

A jet age electronic flash approach system that cuts through fog to guide 600-mph airliners to safe landings has proved effective in bringing in "lost" harbor craft to their slips.

Evaluating what is believed to be the first marine application of the 30-million candlepower strobeacons, the First United States Army reported their successful operation on its ferry slips at Fort Jay, Governors Island, and South Ferry in New York City.

"The fundamental problem of close range fog navigation has now been solved," a First Army spokesman said. "The new system will save thousands of crew and military personnel man-hours formerly lost by fog delays."

The marine fog guidance lights, according to the Signal Section of First Army, are an invaluable aid when ferries move to within 300 feet of slips and radar ceases to provide a clear outline of the shoreline because of its closeness.

The Master-in-Charge of the Army's three-ferry fleet at Governors Island, Captain Emilio F. Bas, reported that with harbor visibility of 100 feet, the fog light can be distinguished 1000 feet away.

The stroboscopic marine light developed by the First Army Signal Section has a peak beam intensity of 30 million candlepower, a flash duration of 250 micro-seconds, and a rated life of 3,500,000 flashes. Each of the three units installed at both Governors Island and Pier Seven, South Ferry, is housed in a cabinet two-feet square and one-and-one-half-feet deep.

Does Not Blind

According to the Army Signal Section, the flashing light arrangement provides a light bright enough to penetrate heavy fog, yet is seen for a sufficiently short period so as not to impair night vision, nor blind in daylight.

Compared to a standard photo flash bulb, the strobeacon light is ten times more brilliant and one thousand times shorter in duration.

An Army electronics expert reported: "Aircraft landing by instruments in a fog are in much the same predicament as a boat traveling by radar. Both find that they are essentially blind for the last few hundred feet of their course, and must rely on crude navigational expedients. For our purposes, the approach lights solve this problem."

Electronic flash approach lights are currently in use at Newark and New York International ariports.

The Army's two 870-ton Diesel-electric ferries make 149 trips each day across a 2700 foot course between South Ferry and First Army headquarters on Governors Island.

Captain William M. McGuire, in charge of New York City's Staten Island ferry fleet, said the Army's strobeacons have proved an "important navigation aid" to city ferries when they approach South Ferry slips during heavy fogs.

Technical specifications describe the strobeacon as: "An ultra-high intensity flashing light source designed for airport lighting purposes. It employs a special Xenon-filled gaseous discharge flash tube operating in a condenser discharge circuit."

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(For details, use Key # X-12 on card on page 1)

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey American Bar Ass'n, New Jersey Bar Ass'n, Chairman, Committee on Workmen's Compensation, New Jersey Bar Association National Federation Insurance Counsel Past Commander, American Legion, Post 10, ... Newark, N. J.

FEDERAL EMPLOYEES' LIABILITY ACT —Negligence of Employer in Not Supplying Proper Tools—Sufficiency of Evidence

In an action under the Federal Employers' Liability Act, the trial judge was incorrect in granting the defendant-railroad a judgment, notwithstanding the verdict, after the jury had returned a verdict for the plaintiff-employee. The plaintiff, a car inspector, was required to examine the cars for defects and close the doors of any cars that may have been open. Since the car doors were often stuck, the plaintiff was provided with a large crowbar for this purpose; on the night of the accident, a door upon which he was exerting pressure with the bar, sprang quickly shut causing him to fall to the ground injuring his back. The plaintiff contended that he had not been furnished safe tools with which to work since a crowbar had been recognized as inadequate by the defendant who had made available chain jacks, very safe and effective devices, to car repairmen in another section of the yard.

The trial judge had entered judgment, notwithstanding the jury verdict, for the defendant on the ground that the plaintiff had not introduced sufficient evidence on the issue of defendant's negligence to send the case to the jury. The court held that in determining whether a verdict in plaintiff's favor in a Federal Employers' Liability action is supported on the record, the sole question is whether there is any evidence, considered in the light most favorable to the plaintiff, that defendant was guilty of negligence which contributed in whole or in part to the injury. If the proof justified the jury's conclusion that the employer's negligence played even the slightest part, the verdict must be upheld. It was held that there was sufficient evidence from which the jury could conclude that the employer failed to furnish tools suitable for the job. The fact that contrary inferences would be equally supported by the evidence is not sufficient to show unreasonableness of the verdict. Reversed with directions to enter judgment for the plaintiff.

Finley vs. New York Central Railroad Co.; Illinois Supreme Court, No. 34,563. May 18, 1960. Reversing lower court decision at P 5512, '58–'60 Decisions.

CAISSON DISEASE—Apportionment of Award—Exposure to Compressed Air —Burden of Proof

An employer appealed a decision which found it solely responsible for the claimant's disabling caisson disease resulting from work associated with compressed air. The claimant had previously worked for two other employers, both employments requiring work under compressed air. The first decision found the three employers responsible and apportioned compensation among them. Before final determination of the compensation, it was discovered that no date of contraction of the disease was established and the decision was remitted. An employer made liable for total compensation, according to the Workmen's Compensation Law, may appeal for an apportionment among the several employers engaged in businesses likely to have resulted in the contraction of the disease. However, since the exposures occurred prior to July 1, 1946, no statutory presumption of injurious nature was available and, therefore, the employer had to prove that the prior exposures to the compressed air were injurious. Since the employer failed to sustain that burden, the court upheld the former decision. Affirmed.

Ryan vs. Patrick McGovern, Inc.; New York Supreme Court, Appellate Division, Third Judicial Department, No. 2374. May 5th, 1960.

EMPLOYMENT RELATIONSHIPS—Independent Contractor

The court had ruled that an injured worker was not entitled to compensation because there was no employer-employee relationship between him and the alleged employer. The man worked for two hours to splice an elevator rope in a nursing home at which his wife

was employed. The alleged employer told the claimant what he wanted and then left the scene. After the claimant had repaired the rope, the elevator became stuck and his wife advised him to jump up and down, a normal practice when the elevator became stuck. The claimant was injured when the elevator subsequently fell rapidly to the basement, seriously injuring his right arm and temporarily disabling him from work. The claimant had been called to the home to do this particular task. He was left alone to do the work in any manner he chose. He had never worked for the alleged employer before and the relationship was to cease after repair of the elevator. Although the claimant was paid on an hourly basis, the court determined that, in the light of the other evidence, the claimant was an independent contractor and not entitled to workmen's compensation. Reversed.

Coontz vs. The Industrial Commission; Illinois Supreme Court, No. 35650. May 18th, 1960.

THIRD-PARTY ACTION—Compensation Insurer's Liability

The workmen's compensation act does not deprive an injured employee of her right to proceed at common law against a third party for allegedly causing her injury through negligence, when the third party is her employer's workmen's compensation insurance carrier. In addition to issuing policies of insurance to the employer, the carrier had conducted monthly inspections of the employer's plant, including the tank which exploded and injured plaintiff and the compressor to which it was attached. The purpose of these inspections was to make sure the plant was in a safe condition, to notify the employer of any dangers, and to recommend changes in the interest of avoiding accidents. It is negligence in the performance of these duties which plaintiff alleges resulted in and caused her injuries. The insurance carrier is deemed to be a third party within the meaning of the act against whom the employee may proceed.

The employer, however, has a claim for the compensation paid the employee against any sums recovered by the employee in such third-party action and the insurance carrier is a substitute in the right to claim sums paid to plaintiff as compensation, even though it is the party being sued in this action. Thus, the defendant carrier will be allowed to set off against any verdict adverse to it obtained by the plaintiff in the tort action the amount of the compensation paid or obligated to be paid to her, on behalf of her employer, thereby preventing double recovery. Defendant's exceptions overruled in part and sustained in part.

Smith vs. American Employers' Insurance Co.; New Hampshire Supreme Court, No. 4805. April 29, 1960.

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*American Pub. Health Assoc., Oct. 15, 1954

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(For details, use Key # X-14 on card on page 1)

The Chemstrand Corporation's nylon plant in Pensacola, Fla., celebrated the completion of two full years without a disabling injury recently, Fred G. Gronemeyer, Vice President and Director of Nylon Manufacturing, announced.

During the past 731 days, plant employees worked a total of 26,189,132 safe hours in continuing to build on their own world's safety record for textile plants.

Chemstrand's nylon plant has won the National Safety Council's Award of Honor eight times since 1956. In addition, in 1956, 1957 and 1959 it was cited by the State of Florida for having the best safety record in the history of the state.

Gronemeyer, in expressing his appreciation of employees' efforts, declared: "It is gratifying to recognize the important part each of you has played in completing this two-year period without a lost-time injury. With this step, we are approaching the world's safety record for all industry. I know that all of you will continue to give your best efforts and feel confident that we will surpass the all-industry world's record of 31,628,159 safe man-hours."

• • •

Winners of the National Safety Council's Association Award for 1960 have been announced. Ten associations, representing various industries in the United States and Canada, were cited for excellence and balance in their safety programs and above-average progress in accident prevention.

The award winners, as announced by Raymond C. Ellis, Jr., director of the National Safety Council's small business and associations division are: Associated Industries of New York State; British Columbia Lumber Manufacturers Assn.; Can Manufacturers Institute; Gray Iron Founders' Society; Greater Chicago Hotel Assn.; Natural Gasoline Association of America; Oil Field Haulers Assn.; Pacific Northwest Loggers Assn.; Portland Cement Assn.; Truck Loggers Assn.

The 10 winning associations represent 2,447 firms employing 2,272,225 persons. Fifty-four associations have qualified for the citation, based on balanced safety activities and success in reducing the number of employee work injuries.

The 10 associations reduced their accident frequency rate in 1959 in the face of a 5 percent rise in disabling injury frequency reported to the National Safety Council.

• • •

A new safety record has been established for Continental-Emsco Company's Houston plant by the employees' working more than one million man hours without a chargeable lost-time or disabling injury, announces Plant Manager S. A. Martin. The record was achieved in a 218 day period from November 17, 1959, to June 22, 1960.

Continental-Emsco is a major manufacturer and supplier of heavy oilfield machinery. Industries of this nature experience an average of 16 disabling injuries with a loss of 700 working days for each million man hours worked, according to U. S. Department of Labor statistics. During the period of attaining this record the Houston plant has had as many as 1,000 employees working three shifts.

Under the direction of Training and Safety Coordinator Lew Jen-

kins, the safety advisory committee together with the shop safety chairmen and committeemen spearheaded the campaign.

One committeeman was assigned to each shift in each department and supervised safety procedures in the following operational areas: assembly, galvanizing, inspection, machine shop, maintenance, material handling, structural, warehouse and welding.

"This outstanding safety record is a splendid example of labor and management working together toward a common goal mutually beneficial to both" Mr. Martin said.

• • •

Employees of the Pennsylvania Railroad are chalking up a significant improvement in safety on the job, continuing the betterment registered last year in the system-wide President's Safety Contest, John T. Williams, manager of safety, announced recently.

"Records for the first half of 1960, in terms of millions of man-hours worked in all regions and departments of the railroad, show a cut of almost 6 percent in employee injuries compared with the same period last year," Mr. Williams said. "That comes on top of an improvement of 4.4 percent for all of 1959, in contrast to 1958."

He said the upward trend in employee safety is accelerating this year on a month-to-month basis.

"For the first four months the improvement was 2.8 percent compared with the same period in 1959, and for the first five months it was 3.9 percent, reaching 5.7 percent for the half-year," Mr. Williams pointed out.

• • •

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The safety record of steelworkers improved during the 1950's as a result of the industry's intensive safety program, according to a report by American Iron and Steel Institute. The accident frequency rate declined 33 percent and the severity rate went down 23 percent over the 10-year period.

For 1959, steel companies reported 3.51 lost time injuries per million man-hours worked, compared with 5.28 at the start of the decade. During the same period, the severity rate decreased from 1190 to 915 days lost per million man-hours worked.

A notable point in connection with the improvement in those records lies in the fact that 1959 was a strike year in the steel industry, and 1950 was not. Safety authorities say that work stoppages affect industry-wide statistics adversely because (a) unusual work conditions are created in shutting down and restarting, and (b) the generally superior safety records of most of the larger companies are not included in the industry average for the duration of the strike.

Early reports for 1960 show that the increase in frequency and severity rates from 1958 to 1959 may have been reversed. Recently, for example, one of the nation's largest steel plants concluded a run of 17,133,243 man-hours—a new record for such a plant.

Learning The Hard Way

FOOT CAUGHT

A lathe operator had engaged the carriage control lever in the "fast travel" position to bring the carriage up near the chuck from the far end. The lead screw and feed screw were vibrating so much that the employee decided to move the spacer guide along to reduce the vibration. He tried to move the guide with his left foot and the toe of his shoe became wedged between the two rollers. Another employee, seeing him in trouble, turned off the machine, but the foot had already suffered severe contusions of the toes, vascular injury and fracture of the big toe. The operator should not have tried to move the spacer guide with his foot. A handle for moving it has since been installed. But the foot injury still could have been prevented if he had been wearing safety shoes. The shoes he was wearing were of cloth with a sponge rubber sole!

A LONG WAY DOWN

This workman was handling bags of beans that had been piled as high as 20 feet. The whole operation was entirely manual, with no pallets nor lift trucks. In trying to pull a bag loose from the top of one of the piles, his hand slipped and he fell over backwards. The resulting fall injured him seriously. If piles are to be made this high, the operation should be mechanized. Without such equipment, piles should be kept to much lower levels.

TWENTIETH CENTURY SCALPING

A girl worker who was operating a machine was wearing a string of beads which broke. She stooped to pick them up and caught her hair in the mill gears of the machine as she bent over. As a result she lost half her scalp. A safe head covering to confine the hair neatly is a must for women operating machines. Also the wearing of beads, bracelets, ring and other jewelry should be forbidden when operating machines.

RAGGED GLOVE A TRAP!

For the safety of employees, ragged and torn gloves and clothing should be replaced. Too often the dangling material ensnares the wearer in an accident. Take the case of a demolition worker who was cutting up sections of boiler room piping and dropping them to the floor below. As he pushed one piece of the heavy pipe off the platform, his ragged glove caught in the metal and he was pulled off the platform. The fall killed him. While the glove was the immediate cause of the accident, the workmen would have been able to save himself if the platform had been provided with a handrail for him to grasp in an emergency.

FALSE SECURITY

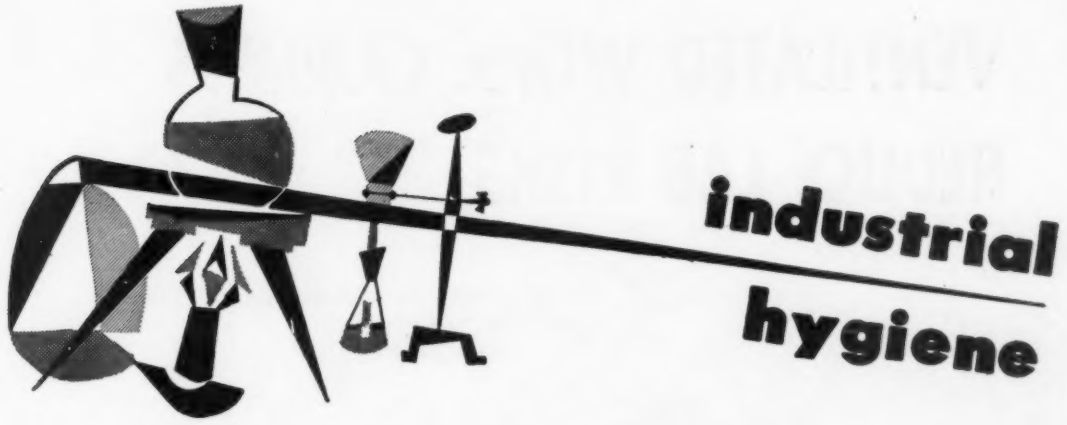
In hazardous occupations, safety equipment must be thoroughly and frequently inspected for any signs of wear that could endanger the user. A lineman was on a hook-ladder hung on a high tension tower. He was wearing a safety belt, but it was quite worn. When he lost his footing, the belt failed to hold him. He died from the internal injuries received from his fall. Safety belts, and all protective equipment for that matter, must be carefully checked for defects. If there is any question about its ability to do its job, it should be replaced with new equipment.

RADIATION EXPOSURE

A laboratory technician was cleaning the x-ray tube of an x-ray fluorescence spectograph. He had removed the turret head assembly to reach the tube, but had not turned the machine off. Fortunately, he did not receive excessive body radiation, although there were x-ray burns on his right hand. Here is a new version of the same old accident—trying to adjust, repair or clean a machine while it is still running. To prevent similar accidents, an electrical interlock system has been installed on the turret head to shut off the power automatically if the turret head is removed.

DRAW YOUR OWN CONCLUSIONS

A production line machine was causing trouble and a maintenance electrician was sent to correct the fault. He soon had the machine running again and returned to the Maintenance Department. When his supervisor asked him what he did, he reported that he discovered the emergency "stop" button was defective, so he disconnected it!



Topics for Public Health Meeting

The American Public Health Association's 88th annual meeting in San Francisco October 31–November 4—its first on the West Coast since 1951—is expected to attract a record attendance of more than 5,000 public health authorities from the Americas and abroad, according to Berwyn F. Mattison, M.D., executive director.

Preliminary program plans call for reports on progress in solving many of the major health problems facing mankind, Dr. Mattison said. Among principal topics are radiological health, health effects of food additives, and genetic and environmental aspects of public health. Several sessions will be devoted to a thorough discussion of medical care programs and plans.

About 60 related organizations will hold meetings during the week. Attending the sessions will be executives and specialists from the staffs of voluntary agencies and international, national, state and local official health agencies. Registration is open to non-members as well as members of the APHA and its related organizations.

Two simultaneous symposia on the morning of October 31 will deal with man and his changing environment. In one, the changing cultural, sociological and political environment will be discussed; in the other, the changing physical, chemical and biological environment.

Other general sessions will feature presentation of the highest awards in public health—the Sedgwick Memorial Medal on the evening of November 1 and the Albert Lasker Awards of the American Public Health Association on November 3. The association's president, Malcolm H. Merrill, M.D., California's state director of public health, will address the November 1 general session.

Among topics of interest to the industrial field to be covered in symposia, workshops and about 400 scientific papers are:

Food and Nutrition—Food additives—their use, what they are, toxicological aspects, and how food companies assure safety.

Health Officers—Hospital-centered public health programs; planning, interpretation and administration of medical care by official health agencies; how good is diagnosis and treatment of breast cancer; the health officer and cancer; and profile on the health officer—implications for recruitment.

Laboratory—Immunization against measles; ultraviolet light in controlling hospital infections; bat rabies and human health; microbiological aspects of frozen food production; usefulness and limitations of fluorescent antibody technic in infectious diseases, and a symposium on mycrobacteria and mycrobacterial infections.

Medical Care—Drug costs and utilization in medical care programs; family medical care under negotiated insurance plans; medical care of children in public programs; inventory of home care programs; changing patterns of care, and quality control in the clinic setting.

Mental Health—Mental health programs and their future; community mental health—evaluation, treatment services; rehabilitation of the mentally ill, mentally retarded, hospitalized mentally ill and adult retardate, and insurance for private psychiatric treatment —first year's experience with 75,000 people.

Occupational Health—Noise as a health problem, and public health aspects of agricultural chemicals.

Public Health Education—The truth about teamwork in practice—on the job, in the professional organization, in training and education; applications of the epidemiologic approach in family teaching, promotion of fluoridation, community organization and enforcement of housing regulations, and interdisciplinary communication problems in public health.

Public Health Nursing—Changes and how they come about, and specialization vs. generalization for leadership positions.

The American Public Health Association, with headquarters at 1790 Broadway, New York 19, and a Western Regional Office at 693 Sutter Street, San Francisco, is the largest professional organization of public health workers in the Western Hemisphere. Its more than 13,000 members include physicians, dentists, nurses, veterinarians, engineers, sanitarians, statisticians, nutritionists, entomologists, biologists, health educators and other specialists in governmental and voluntary agencies and in private practice.

VENTILATED WORK CABINETS REDUCE LAB RISKS

by **BERNARD I. BLICKMAN** and **T. B. LANAHAN**
S. Blickman, Inc.
Weehawken, N. J.

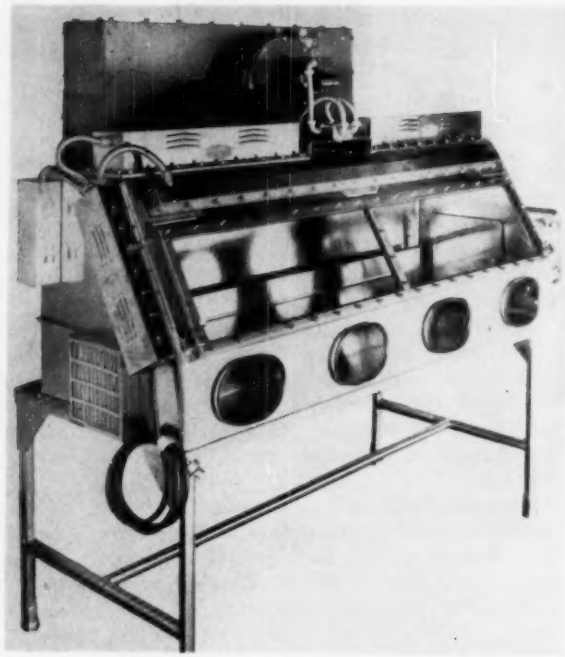


Fig. 1. Stainless steel microbiological safety cabinet features crevice-free round-corner construction for easy decontamination. Air filter can be mounted back or top.

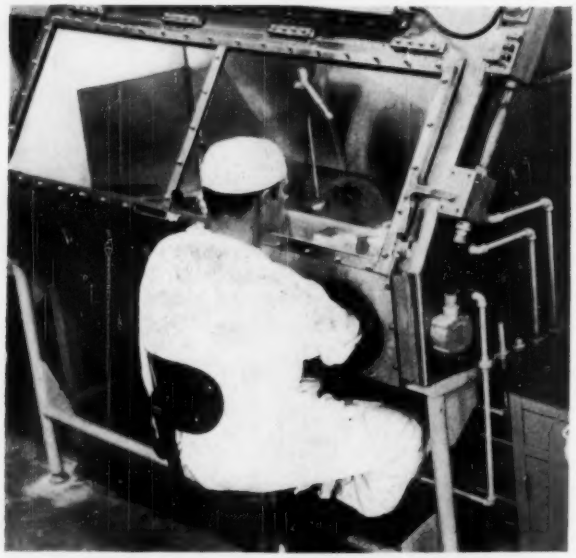


Fig. 3. Many cabinets are adaptable. When small amounts of aerosol are expected, this cabinet can be used without the glove-port panel shown set into unit's side.

Daily routine manipulations in a microbiological laboratory cause the production of environment-contaminating aerosols, which pose a potential hazard to laboratory personnel.[1, 2] A worker's chance of becoming infected depends upon the degree of contamination, virulence of the micro-organism, and his resistance.

In a recent survey of 1342 laboratory-acquired infections in the United States, a case fatality rate of 3% was found.[3] Recognizable accidents accounted for only 16% of the total laboratory infections; as a result there is now intensive work in the field to establish the possible causes of the remaining 84%.

Air Contamination

These studies of the potential sources of infection have centered on the hazards associated with common laboratory techniques. In order to evaluate the hazards involved, a method for determining the degree of contamination of the environment was established. Determinations are made by sampling air with a sieve-type air sampler [4] during bacteriological operations such as pipetting, centrifuging, inoculating and lyophilizing cultures, and autopsying animals. The operational area is surrounded by the samplers, each drawing air at the rate of one cubic foot per minute through 340 small openings. The organisms are thus impinged on the surface of a petri dish agar plate one to two mm. below the openings. After a suitable incubation period, colonies of bacteria are counted.

These determinations have proved that **practically every manipulation in the microbiological laboratory creates aerosols,** which are probably the source of many laboratory-acquired infections. It became evident that certain procedures produce larger amounts of aerosols than others. For example, grinding tissue with mortar and pestle, decanting supernatant after centrifugation, resuspending packed cells, inserting a hot loop in a culture, withdrawing a culture sample from a vaccine bottle, opening a lyophile tube, streaking an inoculum on a rough agar surface, and shaking and blending cultures in high-speed mixers appear to be particularly dangerous to the technician if the micro-organisms are infectious.[7, 8, 9, 10, 11] It was also found that accidents during centrifugation or handling of dried cultures cause extensive contamination within the laboratory.

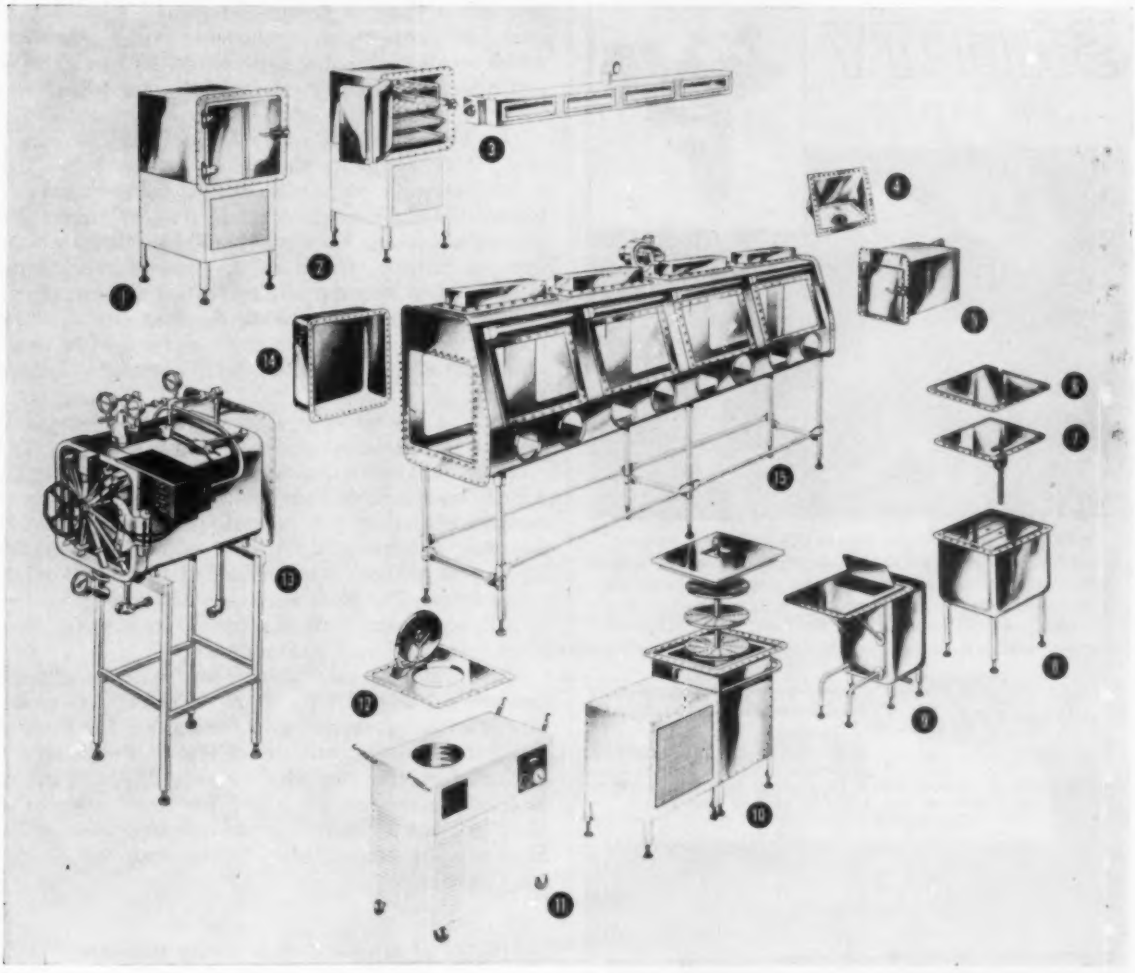


Fig. 2 Components are available as modular units to transform a basic enclosure into a complex laboratory. The units provide flexibility in setting up a laboratory. (See right)

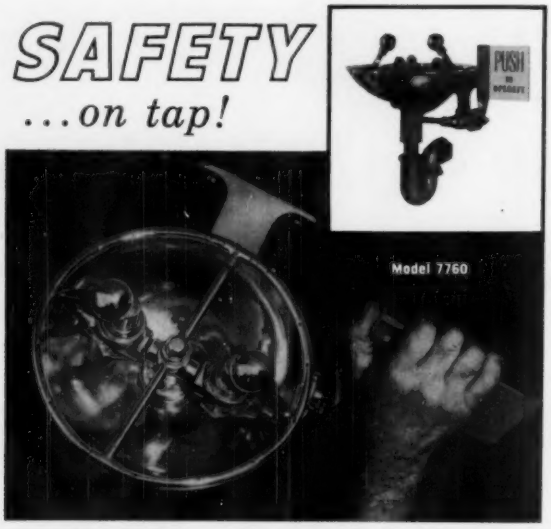
COMPONENTS

1. Biological incubator, back mounted.
2. Biological refrigerator, back mounted.
3. Micro-biological filter canister, back mounted.
4. Microscope recessed panel.
5. U-V air lock, end or back mounted.
6. Adapter panel for back or bottom mounting.
7. Bottom mounted adapter plate with cup sink.
8. Centrifuge bottom-mounted well.
9. Liquid pass tank; end, front or back mounted.
10. Bottom mounted refrigerator or deep freeze with lazy susan.
11. Refrigerated, bottom mounted centrifuge.
12. Bottom mounted cover for refrigerator centrifuge.
13. Double-door, end or back mounted biological autoclave.
14. Back mounted recess for end mounted autoclave handle.
15. Modular safety biological and radiological cabinet.

Contamination Reduction Techniques

It is obvious that contamination can be reduced by improving laboratory manipulation techniques and by designing and using leak-proof apparatus. However, the most effective way to eliminate the source of infection is by enclosing the working area in a ventilated cabinet. Performing his manipulations through glove ports in such a cabinet, the technician is protected against the infectious aerosols by a pane of glass between himself and the working area, while an exhaust blower continually sweeps contaminated air away from him. Air leaving the cabinet should be purified through an effective filter, preferably spun glass.

The decision to use a cabinet for any given work will depend upon the type of organism, technique skill and immunity of the technician, seriousness of the possible illness and its possible sequelae, and the relative isolation of the laboratory. Use of a cabinet is advis-



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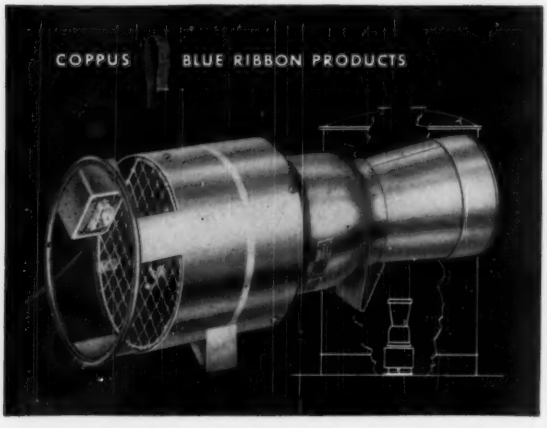

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able when there is potential repeated inhalation of large volumes of nonpathogenic micro-organisms, which occasionally cause hypersensitivity.[5] In addition, nonpathogens have been reported to cause infection in man.[6]

The bacteriological safety cabinet may be simple (Fig. 1) or elaborate depending on need. A large volume of work will justify special cabinets for particularly hazardous equipment such as centrifuges and shaking machines. Cabinets should include ultraviolet light to provide partial disinfection of the cabinet interior when necessary. Sterilization is best accomplished with steam formaldehyde. Required facilities such as water, air, vacuum and gases should be available within the enclosure, with externally located controls.

Modular laboratory equipment, which has recently become available, provides extreme flexibility and economy in microbiological laboratory design (Fig. 2). A basic enclosure can accommodate a wide variety of components, which can be added when required. In this way, a laboratory can start with a minimum of equipment without interference to its future operational scope. The basic enclosure can quickly be tied in with equipment such as a freezer, centrifuge, incubator, etc., as shown in Figure 2.

The contaminated cabinet air may be filtered through a bacterial filter or piped directly to an air incinerator. An electric grid incinerator has been in use at the National Institutes of Health, Public Health Service, for some time. Individually designed gas or oil-fired incinerators are useful for larger volumes of air. Sterilization before renewal or examination of the filter may be accomplished by incorporated electric strip heaters.[12]

Design of Microbiological Safety Cabinets

Modified radiological cabinets have proven satisfactory for work in the microbiological laboratory. A number of materials, both metallic and nonmetallic, may be used to construct this equipment, but stainless steel has been established as the material providing the most desirable results. A finely polished stainless steel cabinet maintains its smooth surface and is relatively easy to decontaminate. Plastic materials have their advantages, but often they present a problem in crazing, where minute surface cracks allow the entrance of difficult-to-remove microbiological matter. The required tightness is also difficult to obtain because of difficulties involved in fabricating plastic sheet.

The design of a satisfactory microbiological safety cabinet is outlined as follows: The cabinet contains a filter canister, which can be mounted either on the back or top of the enclosure depending on space available. The filter canister is provided with three 500-watt electrical strip heaters with two layers of approved-filter media. The canister is thermostatically controlled to operate to 400° Fahrenheit to destroy any live bacteria or viruses. The air system is designed for handling 50 cfm. of air through either the top- or back-mounted canister. The inlet-air filter has a man-

(Continued on page 44)

ACCIDENTAL POISONINGS AND OVERDOSES...

- **There are an estimated 200,000 cases of accidental poisonings *every year* in the U. S.**
- **Over 1,500 die from poisoning every year.**
- **Among children accidental deaths through poisoning are exceeded only by deaths caused by motor vehicles, fires and drowning.**

THIS COULD SAVE A LIFE

This unique Life Guide to Antidotes (of common ingredients found in most family kitchens or medicine cabinets) for Poisoning and Overdoses, appearing on the following pages, is an updated version with important additions, of the chart published in the July 1960 issue of SAFETY MAINTENANCE.

Copies of the Life Guide, imprinted if desired with your company name are available at low cost. Prices are given on the page following the Life Guide and reflect the desire of the editors and publisher to assist you in performing a public service to lessen these tragic accidents as well as to demonstrate the warmth of your interest and concern in the individual welfare of your employees and customers and their families.

FOR CHILDREN UNDER 5 YEARS, Prepare Mixtures as Shown, But Give Only About ¼.

THIS COULD SAVE A LIFE

PASTE ON INSIDE DOOR OF MEDICINE OR KITCHEN CABINET

WHAT ANTIDOTES TO USE

For Poisoning and Overdoses

DO THIS FIRST

Determine:

what POISON or OVERDOSE (of a drug) the patient has taken.

Keep the patient warm.

Give proper antidote for poisons or overdoses listed below — while awaiting doctor.

NEVER FORCE FLUIDS ON AN UNCONSCIOUS VICTIM.

. . . POISONS

Acids - see box 16
Alcohol
  Denatured - see box 15
  Rubbing - see box 10
  Wood - see box 15
Ammonia (Household) - see box 13
Antifreeze
  with ethyl alcohol or ethylene glycol - see box 10
  with methyl alcohol - see box 15
Bleach (Chlorine) - see box 17
Camphor - see box 1
Carbon Monoxide - see box 18
Cleaning Fluids (carbon tet. types) - see box 9
Disinfectant
  with chlorine - see box 17
  with carbolic acid - see box 12

1 If victim is conscious, cause vomiting by giving either:
Tablespoon of powdered mustard in glass of warm water, or
Tablespoon salt in water, or
Inserting finger in throat.
For vomiting, place victim face down with head lower than hips.

2 Give a mixture consisting of:
2 tablespoons of powdered charcoal or powdered burnt toast,
1 tablespoon milk of magnesia,
4 tablespoons very strong tea.

3 Cause vomiting (#1).
Give 2 tablespoons epsom salts in pint (2 glasses) of water.
Finally give 2 or 3 cups of hot coffee or strong tea.

4 Only within first 5 minutes of strychnine poisoning proceed as follows:
Cause vomiting (#1).
Give same mixture as #2.
Artificial respiration.
After first 5 minutes, slightest disturbance may cause convulsions.
Get patient to a hospital.

5 Cause vomiting (#1).
Give same mixture as #2.
Give 2 tablespoons epsom salts in

11 Give 6 tablespoons thick starch paste — made by mixing cornstarch or flour in water.
Then give 6 tablespoons salt in quart of warm water. Drink until vomit liquid is no longer blue in color.
Then give several glasses of milk, or egg whites in cooking oil or milk.

12 Give 4 tablespoons olive oil, or castor oil, or cooking oil.
Then give glass of milk or beaten whites of 2 eggs in glass of water.
Then 1 or 2 cups coffee or tea.
AVOID causing vomiting.

13 Give 2 tablespoons vinegar in pint (2 glasses) of water.
Give white of 2 eggs or 6 tblsp. olive or cooking oil. Coffee.
AVOID causing vomiting.

14 Insert clothespin or wadded handkerchief in mouth to prevent biting or swallowing tongue.
Quickly loosen all clothing, especially around neck.
Watch to prevent self-harm.
If patient has high fever, sponge with lukewarm water or preferably rubbing alcohol.

15 Cause vomiting (#1).
Give 1 tablespoon bicarbonate of soda (baking soda) in pint (2 glasses) of water. Vomit. Re-

Food Poisoning - see box 3
Gasoline - see box 19
Insect & Rat Poisons
arsenic - see box 21
DDT - see box 3
phosphorus - see box 8
sodium fluoride - see box 20
strychnine - see box 4
Iodine Tincture - see box 11
Kerosene - see box 19
Lye - see box 13
Mushrooms (Poisonous) - see box 3
Oil of Wintergreen - see box 10
Paint (Lead) - see box 3
Solvents - see box 19
Turpentine - see box 3
Washing Soda - see box 13

. . . OVERDOSES

Alcohol (Liquors) - see box 10
Aspirin - see box 10
Barbiturates - see box 5
Bromides - see box 3
Codeine - see box 7
Headache & Cold Remedies - see box 10
Laxatives (Candy or other) - see box 6
Morphine, Opium - see box 7
Paregoric - see box 7
"Pep" Drugs - see box 21
Sleeping Drugs - see box 5

CONVULSIONS - see box 14

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pint (2 glasses) of water. Then give several cups of hot coffee or very strong tea. Keep patient walking or moving.	peat until alcohol odor disappears. Then 1 teaspoon baking soda in glass of milk. Protect patient's eyes from light.
6 Cause vomiting (#1). Keep patient warm. Give steamed dry rice or dry toast. Replace body fluids with water or weak tea. **NEVER give cathartics.**	**16** Mix either 3 tablespoons milk of magnesia or whites of 12 eggs in several glasses of water — or give several glasses of milk. **AVOID causing vomiting.** For acids on skin, flush with water for 15 minutes.
7 Give same mixture as #2. Give 2 tablespoons epsom salts in pint (2 glasses) of water. Force patient to remain awake.	**17** Give 1 teaspoon of spirits of ammonia (not household ammonia) in glass of water. 2 cups hot coffee or very strong tea mixed with whites of 3 eggs.
8 Cause vomiting (#1). Give 1 tablespoon epsom salts in glass of warm water. Then give half cup mineral oil. **NEVER vegetable or animal oil.**	**18** Get victim into fresh air. If unconscious, give artificial respiration. Summon police emergency for oxygen. Several cups hot coffee or very strong tea after patient revives.
9 Fresh air immediately. If unconscious, give artificial respiration. Summon police emergency for oxygen. If conscious, cause vomiting (#1). Then give 2 tablespoons epsom salts in glass of water. **NEVER give alcohol.**	**19** Give half cup of olive oil or cooking oil. Several cups coffee or strong tea. **AVOID causing vomiting.** **20** Cause vomiting (#1). Give 2 tablespoons milk of magnesia or 4 egg whites in milk. Then 2 or 3 glasses of plain milk.
10 Cause vomiting (#1). Give same mixture as #2. Give 2 cups strong tea or coffee.	**21** Cause vomiting (#1). Give same mixture as #2. Get patient to a hospital.

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First Aid

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by **DR. W. R. MANN**
Professor
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The eye is encased in a bony orbit, protected above by the forehead, one side by the nose, which comes in various sizes and shapes, and below and to the temporal side by a bony wall. Thus there is a certain amount of mechanical protection except from injuries directly ahead. Here the eyelids offer some protection through the winking reflex. If you see an object approaching, the lids close by an automatic reflex; but if the object moves at high speed or is extremely small, this will be inadequate and the object will strike the eyeball.

The cornea or window in the front of the eye is the most exposed and is therefore likely to be injured. If a small metal particle travelling at high speed strikes the cornea it either becomes imbedded in its layers or if the force is sufficient it penetrates the cornea, passes through the space behind the cornea (the anterior chamber), and either enters the lens or the iris (the color diaphragm surrounding the pupil). Should the force be sufficient, the foreign body may pass completely through the lens or iris into the posterior part of the eye. If the injury comes more from the side, it may miss the cornea and pass through the white sclera into the interior of the eye, where it may be free in the vitreous fluid filling the posterior part of the eye or become enmeshed in the inner layers, the ciliary body, the choroid, or the retina. Such a foreign body, aside from the mechanical damage to the delicate structures of the eye (with tearing of the retina and ultimate detachment, hemorrhage into the eye, and injury to the lens with formation of a cataract) may also introduce infection into the eye. In the absence of these complications there may result an eventual destruction of the eye through breaking up and deposition of metallic particles from a metallic foreign body in the various ocular structures.

One Injury, Both Eyes Lost

The worst possible complication is the loss not only of the injured eye but of the fellow uninjured eye through a process known as sympathetic ophthalmia. This occurs only following penetrating injuries, especially where the ciliary body, a part of the pigmented layer of the eye behind the iris, is involved. A severe inflammation of this layer occurs followed from ten days to many years later by the same type of inflammation in the other eye.

This may well be due to introduction of a virus into the injured eye although the exact mechanism has not been proved. The best treatment is removal of an eye with a penetrating injury if it does not respond well to early treatment before the second eye is involved. Some injuries are so severe as to require immediate removal of the eye because it has been hopelessly lost.

It is frequently possible to remove a foreign body from within the eye with a minimum of damage to the eye and retention of good function. This is particularly true of magnetic foreign bodies where a giant magnet may be utilized in successful extraction of the foreign body even after a long interval. The removal

FIRST AID SERIES
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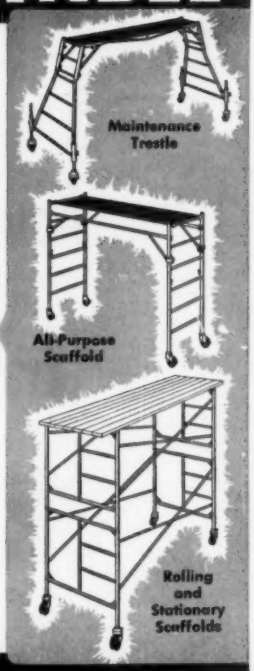

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of non-magnetic foreign bodies of a metallic nature is much more difficult and less successful unless they lie on or in the superficial layers of the eye. Sometimes when they cause little reaction they are left in the eye.

If the foreign body has lodged in the lens, causing a cataract, the cataract containing the piece of metal can be removed. This of course creates an optical problem, as the patient must wear a strong cataract lens in his glasses, making use of the two eyes together difficult but it may mean the saving of an eye. Contact lenses can sometimes be used successfully in these cases.

Blunt injuries to the eye without retention of a foreign body may occur with a resulting inflammatory reaction and with the breaking of blood vessels within the eye so that the eye is filled with blood. Such injuries may also cause holes or tears to develop in the retina which later becomes detached, requiring surgical repair. Penetrating injuries from sharp instruments, such as knives or scissors, require prompt surgical repair. **All of these injuries, penetrating or not, require prompt care from an eye surgeon** and there is little that any nurse or untrained personnel can do to be of help except to refer the patient promptly.

Where First Aid Is Vital

We shall now discuss the type of injury in which first aid treatment may be the most important and **the patient's ultimate vision may depend more upon what is done immediately than what is ultimately done by the ophthalmologist.** These are the cases in which the worker inadvertantly splashes strong chemical solutions into the eye, especially acids and alkalis.

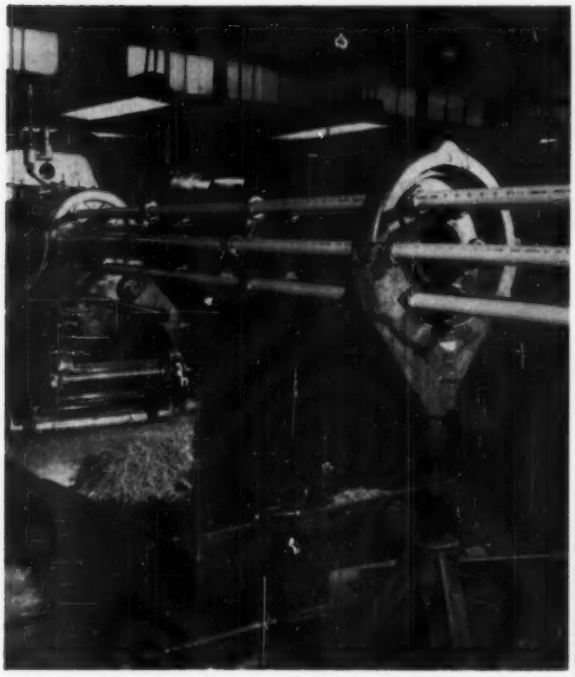
The most important treatment is the immediate irrigation of the eye and complete removal of the caustic substance. It matters little what is used to wash out the eye as long as it is not in itself dangerous. The most plentiful and convenient irrigating solution is tap water. Holding the lids apart, the eye can be placed directly under the running water and thoroughly washed out for as long as might be thought to be necessary **and then twice that long.** Workers handling strong chemicals should be taught to do this at once, either alone or with the assistance of fellow workers. **It is better not to wait until they can be taken to the first aid room as the damage may by then be done.**

Alkalis are particularly dangerous as they remain in contact for a long time and can penetrate into the interior of the eye causing its eventual destruction. Lime burns are especially serious. Here, after thorough irrigation, any remaining lime particles should be removed from the eye and neutralized. All these chemical burns tend to cause opacity of the cornea and while later corneal transplant may be helpful, it is not too efficacious, especially if there has been too complete penetration of the chemical. After the prompt irrigation of the eye for perhaps a period of five minutes the patient must then be examined by an ophthalmologist who will continue irrigation, remove any particles, and prescribe treatment to reduce inflammation and avoid secondary infection.

Burns from heat also occur in many industries.

(Continued on page 46)

How to De-Noise Stock Tube Clatter



What! A quiet machine shop?
Within the last few months an innovation has hit the market whereby the clatter of metal bars striking against metal tubes is now being hushed considerably. The new idea—replacing or lining metal stock tubes with PVC rigid plastic stock tubes (Patent Pending) on both multiple and single spindle screw machines.

What does this mean to management and employees? Simply this. The high noise level of a typical machine shop has a negative effect on the workers' performance especially if the decibel (a logarithmic ratio between two sound pressures) reading is 100 or more. Loud noises can do permanent damage to ears of susceptible employees if exposed for any length of time. Of course, the higher the decibel reading, the greater the chance of possible ear damage.

Authorities state that the biggest single problem facing the Workmen's Compensation Law is loud noises in industry. It's reported that employee claims for ear damage are up over the billion dollar mark.

No Guessing

To take the guess work out of noise reduction measurements in machine shops when metal tubes were replaced with plastic stock tubes, a sensitive

(Continued on page 44)

TYPICAL SOUND PRESSURE LEVELS AND SOUND PRESSURES

Condition	*Sound Pressure Level (decibels)*	*Relative Energy (dynes)*
Pain Threshold	130–140	
Feeling Threshold	120	1,000,000,000,000
Airplane, DC-6 (inside)	104	
Very Noisy Factory	100	10,000,000,000
Subway Car	94	
Automobile	92	
New PCC Streetcar	90	1,000,000,000
Street Corner Traffic, Large City	75	
Loud Radio	74	
Typical Office	60	1,000,000
Average Living Room	40	10,000
Very Quiet Home	20	100
Audibility Threshold	0	1

When this photo was taken, ⅞" copper hex bars were being machined at 848 rpm in metal stock tubes. The 106 decibel reading on the meter means 40 billion dynes of sound energy.

Still turning at 848 rpm, the copper hex bars are hushed to 98 decibels, or 6½ billion dynes, when plastic tubes are used. At 2300 rpm, noise from plastic was ⅛ that of metal.

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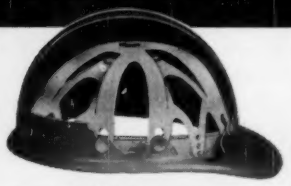

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noise survey meter was taken into a screw machine shop in Pittsburgh.

The first reading was taken as ⅞-inch tellerium copper hexagon bars were clanging against metal stock tubes. The 1¼-inch RA 6 Acme-Gridley was operating at 848 rpm with a surface speed of 220-feet per minute and spindle gear at 38-38. At this rpm the noise survey meter reached 106 decibels. When the machine was geared up to 2300 rpm, the noise meter read 114 decibels.

The metal stock tubes were then pulled from the multiple spindle machine and replaced with six, 9-foot lengths of 1¼-inch plastic stock tubes. The machine, already geared at 2300 rpm, was started. The survey meter registered a decrease of 9 decibels as compared to the steel tubes, and then geared at 848 rpm the plastic tubes read 98 decibels or 7 decibels less than the steel tubes at that rpm.

A decrease of 8 decibels doesn't sound like much to the layman, but to an expert—and to the sensitive ear drums of unknowing workmen—the 8 decibels upped the shop sound pressure by six times.

It should be pointed out that a difference of only a few decibels in sound intensity can make a tremendous difference in the noise reaching the ear in the form of vibrational energy. **Increasing the sound by only 3 decibels approximately doubles the sound energy!**

Actual damage to hearing is not the only problem of noisy factories. An industrial worker who is surrounded by noise all day becomes less efficient in his job, less alert and more inclined to be careless than he would be without incessant clatter.

Noise has a noticeable effect on a workman's nervous system. Increase in blood pressure and muscular contraction, which results in excessive fatigue, and interference with the reception of danger signals and auditory communications have also been attributed to high-level industrial noise.

Eliminates Scratching, Nicking

In addition to deadening noise, the polyvinyl chloride stock tubes* help eliminate nicking and scratching of bar stock. In a matter of a short time, these new stock tubes could pay for themselves—in fewer claims, increased efficiency and reduced stock damage.

These stock tubes were placed on the market during the early part of this year. Already a number of the country's leading industrial concerns have purchased them for their shops. The list continues to grow each day.

* Editor's note: A source for further information about the plastic stock tubes can be obtained upon inquiry to the editor.

Pictures by courtesy of A. M. Byers Co. Table of typical noise levels—Mine Safety Appliances Co.

Ventilated Safety Cabinets

(from page 36)

ually operated damper for introducing air into the cabinet when gloves are in place over the glove ports. The damper can be closed when the technician is working in the cabinet without gloves.

The unit contains two fluorescent lamps in a special stainless steel housing on top of the unit. A cold cathode ultraviolet light sterilizer with low ozone output is installed inside the cabinet above the front window. A large viewing window on the sloping front provides ready visibility of the interior. The window is hinged to allow easy entry into the interior for cleaning or installing large equipment, and locking cams provide firm sealing of the window against the neoprene gasket.

For work requiring a number of cabinets, a recently developed modular type of enclosure allows the use of one or a combination of units in any desired arrangement. The system of interconnected units provides a safe area for performing a number of manipulations on microbiological matter introduced at only one of the enclosures in the system. Through the use of various adapter plates, air locks, and other accessories, the units may be arranged and equipped to meet a specific need.

Cabinet Fabrication Details

Fabrication techniques will have an important bearing on the function of a cabinet. In order to provide for the extreme tightness necessary in a microbiological cabinet, welding is a must. One of the greatest obstacles to easy decontamination, as well as a starting point for corrosion, is a poorly made joint. Specifications should call for a seamless weld, which produces a flush, completely invisible joint. Welding should be done by the inert gas technique to prevent ultimate corrosion of the joint. A weld that contains pits or voids or contains metal that has not been carefully ground flush with the surrounding surface will also cause decontaminating difficulties.

The interior corners of the cabinet should be smoothly rounded to an adequate radius so that it can be cleaned easily. A 1-in. radius for all corners will prove satisfactory. A No. 4 satin finish on stainless steel is recommended for microbiological cabinets.

Pictures by courtesy of S. Blickman, Inc. Fig. 3—U. S. Army photo.

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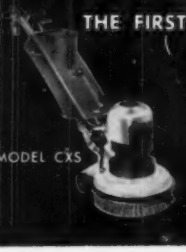

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First Aid for Eye Injuries

(from page 42)

These of course do not require irrigation, but should have the prompt attention of the eye doctor. It has been estimated that only about 12 percent of the burns of the face and eyelids involve the eye, due to the winking reflex previously mentioned. These require antibiotic and steroid therapy as indicated and if they are not too deep usually heal well. If more than the surface epithelium is damaged in these burns, or indeed in any corneal injury, there will be resulting scars in the cornea which may interfere with vision.

Ultraviolet burns of the cornea occur on exposure to rays emanating from the carbon arc as used in welding. Their prevention requires adequate shielding not only of those using the arc but of anyone watching for any period of time. In private practice we frequently see these in "sidewalk foremen" watching welding some hours previously or in people using an ultraviolet lamp to acquire a suntan but not bothering with protective goggles to prevent a suntan of the cornea. Fortunately, while extremely painful, these burns are not very serious and are usually healed in 24–48 hours.

Emphasis has been placed on prompt irrigation in cases of chemical burns of the eye, but it should be emphasized that **in all other cases of eye injury the worker should not attempt self-treatment.** There is usually some worker at the plant who thinks that he is an expert at removing foreign bodies from under the lids and from the surface of the cornea. He may use a dirty old handkerchief or scrape across the cornea and do much more damage than he does good. A trained worker in a first aid station may be able to raise an upper lid and remove a foreign body, but should never attempt to remove a foreign body from a cornea as too deep penetration of the instrument may result in scarring. All such cases should be treated by an eye surgeon.

The most important aspect of ocular injury in industry is prevention and nearly all cases of such injury are preventable. While the use of protective goggles in hazardous occupations is widely adopted, it is all too true that the worker sometimes does not bother to wear them. It requires constant vigilance on the part of whoever is in charge of safety measures to enforce the wearing of what to the worker may be a cumbersome device. Adequate safeguards must be set up with the potentialities and hazards of a particular job in mind to avoid as far as is humanly possible the incidence of serious injury. Compensation for loss of an eye is a heavy expense for industry but it is meager compensation for one of the greatest of tragedies to the worker if he becomes blind.

From an address presented at the 47th National Safety Congress.

Worst Air Pollution

The 12 "worst polluted areas in the United States," according to a poll of air pollution control experts conducted by Consumers Union, are: Birmingham (Ala.), Chicago, Cincinnati, Detroit, Los Angeles, New York, the Niagara area, the Ohio River Valley, Pennsylvania's Allegheny County, Philadelphia, St. Louis and West Virginia's Kanawha Valley.

Of these areas, Consumers Union reported, only Los Angeles, New York, Philadelphia and Cincinnati have "relatively effective" air pollution control programs.

"The conclusion to be drawn, of course, is that they would be dirtier still without their control programs," the consumer group said.

The increasing health hazards and economic costs of air pollution throughout the country are:

- The use of the atmosphere as a "sewer" to carry off the wastes of combustion of modern industrial life is polluting the air so badly that "the problem in some areas has risen to near-crisis levels."
- The rate growth of metropolitan areas—there are now more than 200 in the U. S.—frequently makes air pollution control not merely a local problem but a regional one, calling for "cooperation among neighboring communities which pollute each other's air."
- Effective air pollution control requires three steps: (1) Monitor the air—determine which pollutants are present and measure their quantities; (2) Locate the sources of pollution, and (3) Control the sources of pollution.
- The problem of air pollution control "is not so much scientific as it is sociological and legal: to persuade or force polluters to take the steps required" to abate the pollution.
- Laws "with teeth in them will have to be enacted—and enforced."

THE FIRE FRONT

Lowering Fire Toll Aim of NBFU Engineers

Activities aimed toward decreasing loss of lives and property from fire and other hazards characterized the work of the Engineering Department of the National Board of Fire Underwriters during the past year.

The Engineering Department, on the heels of an extensive study on potential hazards in connection with the use, storage and transportation of explosives issued a detailed report and analysis of the catastrophe in Roseburg, Oregon last year caused by the explosion of a truck load of ammonium nitrate blasting agent and dynamite, which detonated by a fire, killed 13 persons, injured 125 others and caused property damage exceeding $9,000,000. The report recommended tightening of controls over the shipment of explosives by motor carrier.

The Engineering Department in connection with its grading of cities, prepared reports on 40 cities throughout the United States in 1959. Supplemental reports were issued on 38 additional cities, and five special reports were made on particular phases of municipal fire protection. Gradings were made on 59 municipalities.

These facts were contained in the report of the Engineering Committee presented at the annual meeting of the National Board of Fire Underwriters. The report was presented by Frank F. Dorsey, executive vice president of the United States Fidelity & Guaranty Company and chairman of the Engineering Committee.

Mr. Dorsey, in his report, said the National Board through its analysis of water supply systems provided cities with definite plans for improving water adequacy and reliability.

Among innovations in 1959 was the development by the Engineering Department of a newly designed municipal report evaluating the fire protection facilities of towns and cities. The municipal reports give special consideration to important shopping centers including the water supply available, private fire protection and response distance of the nearest engine and ladder company to those areas.

July Losses Rise

Estimated fire losses in the United States during July amounted to $82,998,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 0.8 percent over losses of $82,334,000 reported for July 1959, and an increase of 0.2 percent over losses of $82,829,000 for last June.

Losses for the first seven months of 1960 now total $656,769,000, an increase of 2.1 percent over the first seven months of 1959, when they amounted to $643,200,000. These estimated losses include an allowance for uninsured and unreported losses.

Mr. Dorsey added that increased emphasis has been placed on the importance of maintaining an adequate force of fire fighters on duty at all times in municipal fire departments. Special bulletins issued during the year on fire department man power pointed out the loss of protection that accompanies reducing the number of men on duty and the fire fighting limitations of inadequate company manning.

The National Board has been called upon by many cities for consultation with regard to improving the location of fire companies, and providing adequate protection in expanding areas.

"The staff engineers," said Mr. Dorsey, "are continually working with city officials in an attempt to improve fire department operations and to encourage efficient use of fire fighting equipment."

The Fire Prevention Code recommended by the National Board continues to be the only model code of its type and it is increasingly being accepted by municipalities, he added. Adoption of the complete Fire Prevention Code was reported by 154 municipalities during the year, and 38 towns and cities adopted an abbreviated edition of the code, bringing the total number of adoptions to 1600.

The Engineering Department also encouraged the use of safe methods of building construction by urging the adoption of the National Building Code. The Building Code is recognized as a sound "set of building construction requirements consistent with national standards of safety to life and property and other hazards." Staff engineers visited 53 municipalities to assist in solving local problems regarding adoption and enforcement of the code.

During 1959, the complete Building Code was adopted by 63 municipalities, and the abbreviated edition by 44, bringing the total number of adoptions of various editions to 1256.

In connection with the Home Inspection program to reduce fire hazards, Mr. Dorsey said around 30,000,000 dwellings in North America were inspected by uniformed firemen during 1959. The program is sponsored by the National Association of Fire Chiefs, and the National Board has actively participated in this program throughout the nation.

As a result of the inspections, reports from Fire Chiefs in thousands of communities show that where Home Inspection work is

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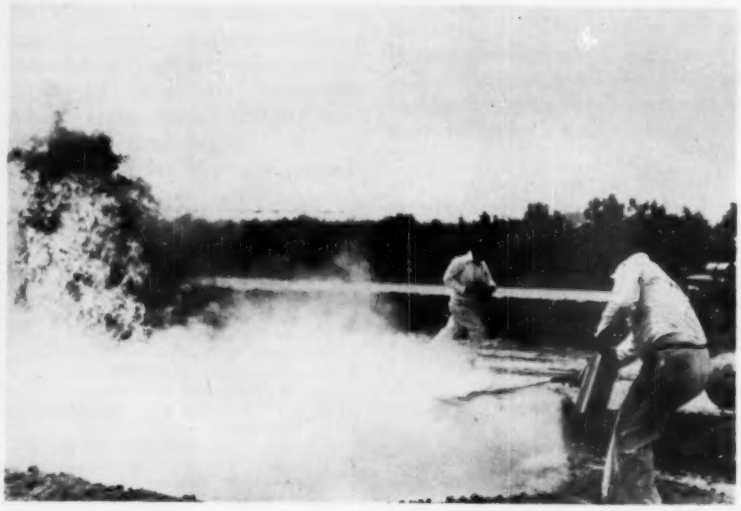
carried on, there are reductions of from 10 to 40 percent in the number of dwelling house fires.

Mr. Dorsey said in conclusion:

"It is recognized without controversy that the saving of lives and property is a prime public service. The engineering activity of the National Board in promoting and encouraging fire defense makes good sense for us as well as the public.

"We have a multiplicity of statistics on lives lost and property destroyed by fire. Unfortunately, there are no statistics available on the number of lives and value of property saved through fire prevention and engineering work. All interests including architects, builders, fire services, all segments of industry and, particularly, the National Board staff have cooperated to bring about major improvements in this vital field of endeavor. The cost of this engineering work is insignificant compared with conservation of lives and property saved."



New Extinguishing Agent Being Developed

A powerful new extinguishing agent for fires in jet fuels, gasoline and other flammable liquids was demonstrated for the first time to the press recently at MacArthur Field at Ronkonkoma, L. I., N. Y. Although it is still in the development stage, the new dry chemical type agent is expected to have important fire extinguishing potential for air crash fires, as well as in the petroleum, chemical, marine and trucking industries. All suffer huge losses annually from fires caused by accidental ignition of volatile fuels.

The new agent is called Purple K partly because of the purple glow it gives off on contact with flame. K is the chemical symbol for potassium—Purple K is actually potassium bicarbonate or $KHCO_3$. It has been treated to make it free flowing, water repellent and non-caking. Untreated potassium bicarbonate cakes readily.

Purple K was developed for the Navy Bureau of Weapons crash-fire research program. Development was initiated by the Naval Bureau Research Laboratory working closely with a number of extinguisher manufacturing companies.

Purple K is non-toxic, non-corrosive, non-abrasive and does not freeze.

The Navy has already begun to equip its fire crash trucks with Purple K, although it is not yet commercially available to industry. Engineers point out that Purple K can be used with most existing dry chemical fire extinguishers.

Picture by courtesy of Ansul Chemical Co.

NO FIRES—

Fig. 1 Fire equipment safety engineer explains to "News" employee how system can be activated manually from the cylinder location. Nearby switches automatically shut off presses and the duct fans when the system operates.

Fig. 2 Engineer points to one of the press' rate-of-temperature-rise fire detectors (in wire cage) which triggers system automatically. Note the two carbon dioxide discharge nozzles aimed at the ink fountain at center right.

—HIT THESE HEADLINES

Use of flammable gravure inks always present a fire hazard to printing houses. A press room fire can damage valuable press equipment, suspend production for hours, days or even weeks, and cause crippling revenue losses.

The problem of protecting itself against these dangers recently faced New York City's "Daily News" when it installed a new four-color rotogravure proof press at its Brooklyn plant. While fire damage to the plant and the expensive four-unit press concerned the paper's management, its primary worry—in addition to safeguarding personnel—was minimizing possible "down time" resulting from fire, as this press plays a vital role in getting out the more than 3,400,000 Sunday supplements printed weekly.

With this in mind, the plant's safety personnel included every fire safety device in the press area. A "No Smoking" rule, use of devices such as static eliminators, explosion-proof lights and electric switches, and proper ventilation, however, are no absolute guarantees against the flash of fire.

There are two primary fire hazards connected with the press. The first is the flammable ink and paper at the press itself; the second is the press' forced-draft air ducts which whisk off volatile vapors and become coated with inky deposits.

The News working with fire extinguishing equipment engineers installed an automatic carbon dioxide fire extinguishing system to cope with the hazards. Eight 75-pound cylinders of pressurized carbon dioxide store the fire-smothering agent. (Figure 1.)

Under normal conditions, temperature-rate-of-rise detectors stand automatic fire watch. Each of the press units has one of them mounted above the printing cylinders (Figure 2). If fire flashes, the detectors automatically trip the cylinders. Carbon dioxide floods from the cylinders under its own pressure, rushes through piping, and is discharged as an inert gas from multiple nozzles. It completely envelops the press and ducts. By reducing oxygen to a point insufficient to support combustion, carbon dioxide smothers the fire in seconds. (Figure 3.)

Fig. 3 Only seconds after the carbon dioxide system was actuated during a test, the fire-smothering gas has already enveloped the press unit up to the web.

Auxiliary Safeguards

A number of pressure-operated switches are built into the systems. When a system is actuated, the passage of the agent through directional piping throws these switches. They shut down the press drive ma-

(Continued on page 53)

CONDUCTIVE FLOORING HOSPITAL OPERATING

Conductive flooring is as serviceable as nonconductive flooring of the same type, and it reduces explosion hazards, according to a recent National Bureau of Standards investigation [1] sponsored jointly by the Army, Navy, and Air Force. The Bureau also found that current methods for measuring the resistance of installed conductive floors reasonably simulate the conditions these floors meet in service. The investigation was carried out by T. Boone, F. Hermach, E. MacArthur, and R. McAuliff.

Although the flooring was investigated primarily for use in hospital operating rooms, many of the results obtained should apply equally well to floors that are used in other locations such as munition plants or storage depots for explosives. Consequently, architects may now choose conductive flooring materials for all these uses, within some limitations, on the basis of the behavior of similar nonconductive materials.

Explosive vapors are often present in hospital operating rooms. If static electricity is allowed to accumulate, it can cause sparks having sufficient energy to ignite these vapors.[2] The most effective means for reducing this hazard is to keep the electrical resistance between objects in the area so low that the minimum sparking voltage (about 400 v) is never attained. Conductive flooring provides the necessary linkage because most objects normally rest or move upon the floor.

Electrical resistance of flooring material is generally lowered by adding carbon black which is produced by thermally decomposing acetylene gas under carefully controlled conditions. Carbon black is dispersed in the mixes that are shipped for on-the-job composition of latex, concrete terrazzo, and the setting bed for the ceramic tile. On the other hand, the carbon black is dispersed during manufacture in ceramic, linoleum, rubber, and vinyl flooring.

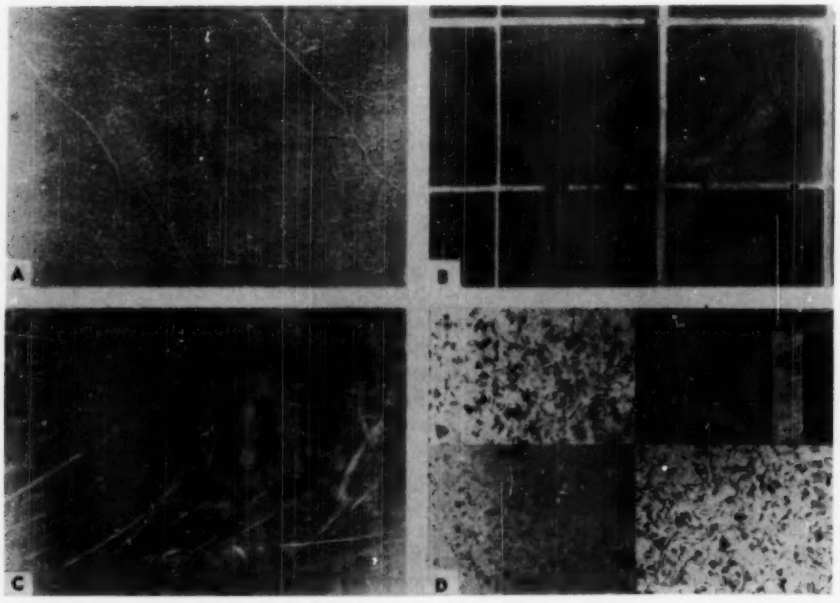
Testing Method

Specifications and measurements of flooring resistance are usually made according to the method rec-

1 For further technical details, see Conductive flooring for hospital operating rooms, by Thomas H. Boone, Francis L. Hermach, Edgar H. MacArthur, and Rita C. McAuliff, J. Research NBS 63C, No. 2 (1959).

2 Hazards from static electricity, NBS Tech. News Bul. 36, 82 (June, 1952).

Fig. 3



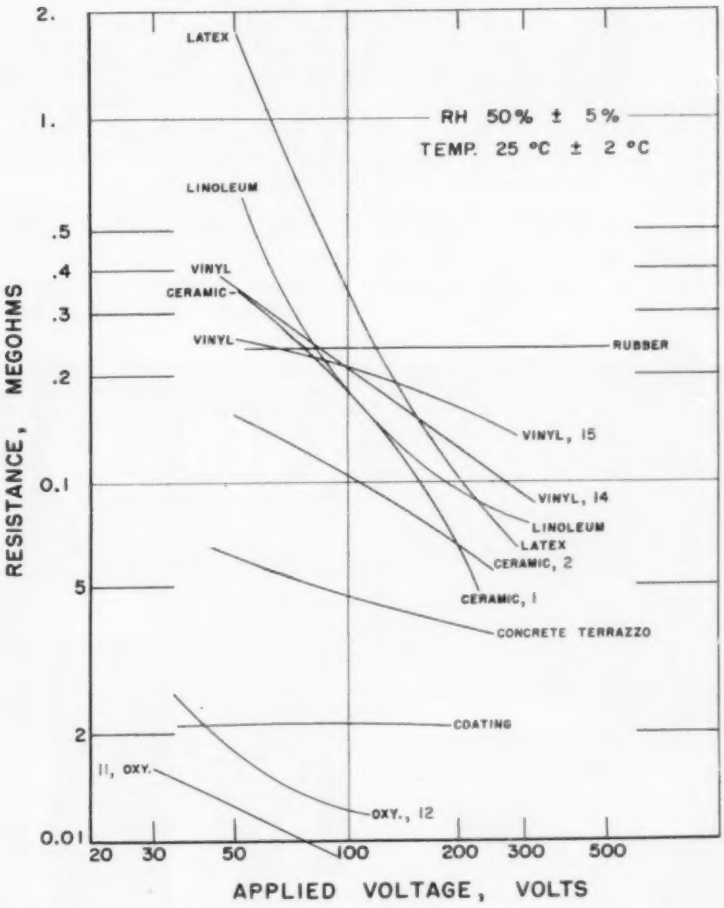
LEFT: In pedestrian ramp tiles note fine cracks in A (oxychloride), pitting of mortar joints B (ceramic), scuffing in C (rubber) and heavy soiling in D (vinyl).

RIGHT: Traffic tests for conductive flooring, as on such ramps, provide further evidence as to suitability of a variety of materials.

FOR ROOMS

ommended by the National Fire Protection Association (NFPA). According to this method,[3] resistance is measured by means of a 500-v ohmmeter connected to two similar electrodes that simulate footwear and conductive rubber objects. A conductive floor should have a resistance low enough to prevent the build-up of dangerous static-charge voltages, yet its resistance should be high enough to prevent sparks or severe shocks from electric power lines or equipment that might become defective. According to NFPA, floors should have a resistance falling between 25,000 and 1,000,000 ohms when measured between specified electrodes that

3 Code for Use of Flammable Anesthetics, (Safe Practice for Operating Rooms), N.F.P.A. No. 56, National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts.



Graph showing effect of applied voltage on the electrical resistance of a number of floor tile materials. The tests are conducted under national standards.

Fig. 1

Fig. 2

are three ft. apart. The upper limit specified by NFPA provides a safety factor of more than 10, even under conditions of low humidity, if materials such as wool and plastics are prohibited.

In the Bureau's laboratory investigation, however, electrodes were spaced at one-ft. intervals—necessary because of the 18 × 18-in. sample size that was chosen for convenience in the experimental work. A preliminary study showed that this spacing would yield experimental results very close to those obtained from tests of an entire floor at an electrode spacing of three ft. Electrical tests were made under deliberately varied conditions of relative humidity and applied voltage. In addition to the laboratory tests on samples of flooring, field tests were made on five different types of conductive floors installed in hospitals in the Washington (D. C.) area.

Test Results

Results from studies of the influence of moisture and other factors showed that conductive floors should give satisfactory service in hospital operating rooms if certain precautions are observed. If oxychloride floors are used, the humidity of the air in the room in which they are installed should be controlled, and the cleaning schedule for the floor should be carefully established and maintained. Laboratory tests indicate that otherwise the electrical resistance of the floor may fall outside the accepted limits.

The durability and appearance of

at least two of the available materials (linoleum and rubber) may depend on periodic waxing. Conductive waxes containing carbon black which do not deposit an insulating film are available, and should be esthetically as well as electrically satisfactory on these uniformly black floors. Sealers should probably not be used on conductive floors until proven satisfactory by extensive electrical tests.

To substantiate the electrical test results, additional tests were carried out in which each type of floor was actually used to reunite electrostatic charges. Thus, a direct test was made of each flooring's effectiveness in eliminating static electricity hazards.

There was excellent correlation between the electrical and electrostatic tests. For all but two of 12 specimens tested, peak voltage was less than 300 v when the resistance between 2 standard electrodes was less than 1,000,000 ohms. Conversely, the resistance was greater than 1,000,000 ohms when the voltage exceeded 300 v. Because this voltage is below the minimum sparking voltage in air, the specified 1,000,000-ohm limit with the standard electrodes was proven to be a reasonably valid criterion of the performance of these floors.

Nonelectrical Properties Studied

The nonelectrical properties studied were **indentation, scratch resistance, slipperiness, scrubbing, water absorption, and stain resistance.** Results of each study showed that the characteristics of the conductive materials are comparable to those of the corresponding nonconductive materials.

Of the properties studied, scratch resistance is probably the most important in hospital operating room floors for the sake of cleanliness as well as for ensuring good contact resistance. Two methods were used for measuring scratch resistance. In the first, a diamond point was moved across a flooring sample and the scratch width was measured. Loads on the diamond point were 250, 500, 750, and 1,000 grams. In the second method, a pedestrian traffic test ramp was used to simulate actual flooring use. (See Figure 2.) Photographs were made after 11 months (100,000 passages) and compared with photographs of unexposed flooring to determine the extent of scratching, smudging, and other damage. (Figure 3.)

Pictures by courtesy of the National Bureau of Standards.

(For details, use Key # X-22 on card on page 1)

Revised Incinerator Code

A newly revised standard on the installation and operation of incinerators has just been issued by the National Fire Protection Association.

Designed to provide for the fire-safe installation of this equipment and minimize various hazards, the standard was developed by the NFPA Committee on Chimneys and Heating Equipment under the chairmanship of E. W. Fowler, chief engineer of the National

Board of Fire Underwriters. It was adopted at the recent NFPA annual meeting in Montreal.

The 1960 edition includes changes on such features as the instruction to be provided for the operation of incinerators, screens or other protection, and a revised definition of combustible material to be protected. Also included is material on rubbish handling covering many details of proper procedure in the ever-present problem of disposing of combustible waste materials.

Copies of the new standard (NFPA No. 82, 32 pages, 50 cents) are available from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.

Tank Vehicles for Flammable Liquids

New safety provisions have been incorporated into the revised edition of the Standard for Tank Vehicles for Flammable Liquids just released by the National Fire Protection Association.

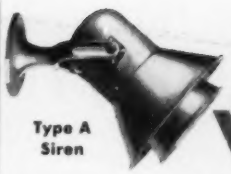
Widely adopted by states and municipalities to regulate tank vehicles operating intrastate, the amendments to the 1960 edition of the standard were adopted at the recent NFPA annual meeting.

Among the changes are provisions for anchoring the cargo tank to the chassis to assure greater stability and safety, and clarification was made of the provisions for bonding of the tank vehicle to the loading rack.

Another new provision will require that tank vehicles be marked with the word "flammable" or with the common name of the flammable liquid being transported.

Changes in the 1960 edition of the standard were developed by the NFPA Sectional Committee on Transportation of Flammable Liquids, chairmanned by J. H. Myers, of Atlantic Refining Co., Philadelphia.

Copies of the standard (NFPA No. 385, 28 pages, 50 cents) are available from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.



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(For details, use Key # X-23 on card on page 1)

No Fires Hit Headlines

(from page 49)

chinery, and turn off exhaust fans. At the same time pressure operated trips close duct dampers—all automatically.

A pull box has been provided near the press which provides a means of manually actuating the system.

Besides prompt extinguishing action, carbon dioxide possesses a number of other advantages which the Daily News finds particularly appealing. Being an inert gas it is a nonconductor of electricity and cannot damage motors, electrical circuits, rollers, inventory, etc. Second, following discharge it soon dissipates into the atmosphere leaving no mess to be cleaned up. Finally, pressurized carbon dioxide systems are self-contained and require no electrical power for their operation.

Pictures by courtesy of Walter Kidde & Co., Inc.

WATCHCLOCK STATIONS

Several watchclock stations of improved design have been announced by Detex Watchclock Corp. The new models, engineered for factory, office and institutional locations, include two units especially suited for outdoor installation. Choice of recorder or recording key. Some stations have cover lock to prevent tampering.

For details, use **Key # FP-1** on inquiry card on page 1.

PORTABLE FIRE PUMP

A new Model DC volume-pressure water pump which is compact, weighs only 130 lbs. and easily carried by two men, is being marketed by American La France. It can be used alone or as a relay. A foam nozzle or pick-up tube may be attached if necessary. Unit will also serve as an auxiliary pump for flooded cellars.

Easy to stow, it will handle any type of pumping job. It is rated up to 250 GPM at 15 PSI, and is powered by a 9 h.p. Briggs & Stratton 4-cycle engine. It features corrosion-resisting, high tensile aluminum alloy castings. Frame is channel steel, with collapsible handles. A simple effective exhaust primer operates in a few seconds. Model DC has standard 2½" discharge, and 2½" suction with cap and screen.

For details, use **Key # FP-2** on inquiry card on page 1.

NEW PROCEDURE FOR REFINERY PROTECTION

Pump houses, pipe trenches, manifold pits and other "hot spots" in refineries are offered fire protection through a procedure developed by National Foam System, Inc. The plan requires a minimum amount of fixed piping at the site of the risk, plus the availability of one or more foam trucks of good capacity.

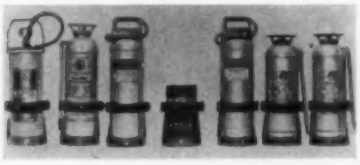
In the case of a pump house, for example, overhead foam spray heads are installed in a single pipeline connected to a nearby fire main. A proportioner holding sufficient Aer-O-Foam liquid to operate the system for several minutes is placed at a convenient point in the line. On the downstream side

FIRE PROTECTION DEVELOPMENTS

of the proportioner, a hose connection is provided.

If fire breaks out, the operator starts the system by opening a single valve. Foam discharge begins immediately, using the supply in the proportioner. At the same time, the foam truck is alerted. As soon as it arrives at the site, its discharge hose is connected to the proportioner. This provides an ample supply of foam liquid to continue operation until the fire is extinguished.

For details, use **Key # FP-3** on inquiry card on page 1.



NEW EXTINGUISHER BRACKET

A clamping, band-type fire extinguisher bracket has been introduced by Walter Kidde & Company, Inc., for use with any of its 2½ gallon wet chemical portables. It is designed for installation on automotive equipment, on shipboard or wherever heavy vibration is encountered. It can be wall, floor, or running board mounted. While the new bracket grips the portable securely, only a flip of the wrist is needed to free the extinguisher for immediate use.

For details, use **Key # FP-4** on inquiry card on page 1.

TWO-WAY FIRE HOSE UNIT

Hide-A-Hose allows quick fire protection from either side of a wall. The hose is stored on a reel mounted on one side of the wall. On the opposite side of wall is a door to the compartment holding the hose nozzle and valve. Nozzle and valve are accessible from both sides and hose may be pulled out from either side. Unit can be installed for service between rooms inside a building, or, to permit use of hose both indoors and outdoors.

Hose is also available for washing floors, sidewalks, etc.

The unit includes a double-flanged aluminum reel, 44 in. in diameter, an aluminum compartment 16 in. wide by 8 in. high, 150 ft of ⅝-in. rubber and nylon hose and a brass fog and stream nozzle. The hose cannot stick, nor can it kink if it is pulled out in a straight line. The action of pulling out the hose instantly releases a brake on the hose reel; when pulling stops, the brake re-engages the reel, stopping its rotation immediately. Concave roller bearings allow the hose to travel smoothly in all directions of pullout.

For details, use **Key # FP-5** on inquiry card on page 1.

SELF-POWERED FIRE ALARM

Simple visual inspection and added neatness of design are features of a new series of Freon powered, self-contained Automatic Fire Detectors manufactured by the Falcon Alarm Co., to give early warning of fire. A sight glass has been added to the alarm so that the level of the liquefied gas can be quickly checked at a glance to be sure the unit is fully charged and ready to operate.

"S" series Detectors are compact and easy to install with a screw driver; available with temperature ratings of either 136° F or 174° F. They provide a loud, piercing warning audible throughout the protected building and at great distances outside. Installable as individual units or interconnected with tubing to form a system. Both types approved by Underwriters' Laboratories, Inc.

For details, use **Key # FP-6** on inquiry card on page 1.

FIBERGLASS FIRE PUMP

A new fiberglass fire pump with 5-gallon form fitting tank has been added to their line of Indian pumps by D. B. Smith and Co. The water dispensing unit is light weight, easy to handle, and will not rust or corrode. 9 lb. pump is offered with a single or twin nozzles.

For details, use **Key # MP-7** on inquiry card on page 1.

FIRE CONTROL CHART

A two-color chart (8½" x 11") which explains the three classes of fires and the approved portable extinguishers to be used on each has been prepared by Walter Kidde & Co. The chart shows the latest extinguishers and detailed information including ratings based on the new UL standards. Data covers Class A, B and C fires and extinguishers suitable or unsuitable for each.

For details, use **Key # FP-8** on inquiry card on page 1.

NONELECTRIC AUTOMATIC FIRE ALARM

An economical, heat sensitive, self-pressurized fire alarm with a visual glass eye monitor indicating liquid level, is being offered by Standard Fire Alarm & Signal, Inc. The alarm has UL approval for 1500 feet of tubing in a single, one-horn system, to give early warning in an unlimited number of areas. Also approved for use with two horns in one system. Unit, which contains no moving parts, batteries or wires, sounds a blast of noise lasting from 15 to 20 minutes.

Available in fixed temperatures of 136° F and 174° F. At a given temperature, released pressure actuates the signal horn. Only the unit in the danger area operates.

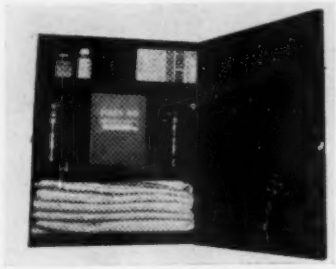
For details, use **Key # FP-9** on inquiry card on page 1.

NEW EXTINGUISHER APPROVED FOR ALL CLASSES OF FIRES

The first extinguisher to be listed by Underwriters' Laboratories for use against all standard classes of fires—Class A, mainly paper and wood; Class B, burning liquids; Class C, live electrical fires; and combustible metal fires, including magnesium—is being marketed by Alim Corp. Operation of the ABC AllClass is by one-hand grasp and instant discharge without inverting. Unit is designed for close maneuvering; operator is protected from heat of flames by a cloud of powder that is non-toxic, non-conductive and non-abrasive.

Controlled flow at valve keeps hose and nozzle clear. Unit effective in temperatures as low as 40° below zero. One of the major benefits of the universal extinguisher, the company states, is that it eliminates the danger of using the wrong type of unit. Key to the development is a new extinguishing agent, Alim ABC AllClass Powder.

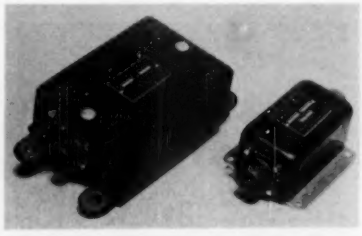
For details, use **Key # FP-10** on inquiry card on page 1.



FIRE EMERGENCY KIT

An emergency kit, designed to offer protection against small fires, is available from Headlite Products. The kit, packaged in a metal container which can be hung on the walls of small shops, stores, laboratories, boiler rooms, etc., contains hand-size fire extinguishers, asbestos fire blanket, first aid kit and book and bandage shears. Extinguishers are approved 2½ lb. dry chemical units, suitable for electrical and flammable liquid fires and also small, incipient fires involving paper, fabrics, wood, etc.

For details, use **Key # FP-11** on inquiry card on page 1.



SMOKE DETECTION FOR AIRCRAFT

A system to provide early warning of possible combustion on commercial and corporate aircraft has been developed by Pyrotector, Inc. Pyrotector units "see" smoke in unguarded areas and give an alarm before the situation becomes dangerous. The device is a visual one and works on the principle of light reflection. Up to 6 detectors may be connected to one control unit, giving protection to several different baggage and equipment areas through a single system.

The system consists of one control amplifier and from one to six smoke detection assemblies. A remote warning indicator is used in conjunction with a high intensity audible signal. The system is easily and completely tested with a single selector switch and is said to provide 100% aircraft smoke detection.

For details, use **Key # FP-12** on inquiry card on page 1.

COMPACT SPARK ARRESTOR

A spark arrestor for gas or diesel engines using a four-inch exhaust stack is available from Erickson Products Co. It is primarily designed for large trucks, tractors, loaders and other equipment used

in forests, fields, brush and other hazardous areas where incandescent exhaust carbon can start fires. Reported to trap almost 100 per cent of the exhaust carbon from the engine and to exceed all test requirements of the U. S. Forest Service.

For details, use **Key # FP-13** on inquiry card on page 1.

FIXED TEMPERATURE THERMOSTAT

Designed to provide protection in small areas, the N-Co-Stat heat detector, a product of Notifier, is a

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s, use **Key # FP-14** on
on page 1.

M-WATER SYSTEM

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ea with foam in 30 to

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on page 1.

S FLAME PROOFER

oofing chemical for the
of textile containing
acetate rayon fibers has been announced by the Flamort Chemical Co. According to the company, the fire retardant, designated as Flamort-"U," is the only known chemical that will successfully flameproof fabrics such as acetate rayon, Celanese, Nylon, as well as mixed fibers such as acetate rayon and cotton, acetate rayon and linen, etc. It has been approved by the California State Fire Marshal and meets requirements and specifications of the National Fire Protection Association and A.S.T.M.D. 626-41 T.

For details, use **Key # FP-16** on inquiry card on page 1.

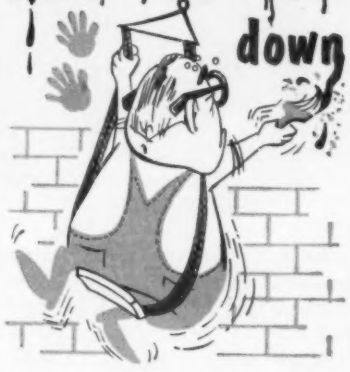
NEW CARBON DIOXIDE UNIT

Carbon dioxide fire extinguishers in three new models have been introduced by Ansul Chemical Co. for use against certain flammable liquid, gas and electrical fires. Available in five, ten and fifteen pound sizes, these extinguishers are well suited for indoor use where winds and drafts do not affect discharge of the gas or where an extinguishing agent which leaves no residue is required.

Carbon dioxide, nontoxic and noncorrosive, does not contaminate material which it extinguishes such as food, oils, waxes and other material which might be processed near a fire area. Units offer hazard protection for low voltage electrical equipment, electronic equipment and laboratories. The working parts will not freeze or foul. Effective at temperatures as low as —40° F. No annual recharging is necessary and maintenance cost is low. UL rated and approved for marine use by the U. S. Coast Guard.

For details, use **Key # FP-17** on inquiry card on page 1.

The case of the Bo's'n's Swing that Wore the Man down



It wasn't the work...but trying to do the work in an ill-fitting, non-adjustable Bo's'n's Swing that wore down old Sam before quitting time. To work efficiently, the man must have perfect balance... that means the harness must fit the man.

Safe-Hi **Fully Adjustable Bo's'n's Swing**

keeps the user in perfect balance. It's convenient, comfortable and safe with 3-inch 4-ply cotton body pad, hardwood seat* that can't fall out, nylon web straps and special loops for attachment to separate life line. Balance would be retained in case of a fall on the life line, and even though the worker is unconscious he will not slip out. Safe-Hi Safety Equipment is as safe as continuing research and a lifetime of experience can make it. For complete information on Safe-Hi Bo's'n's Swings, Belts, Lanyards, Shock Absorbers, Ladder Shoes...write for free catalog. R 0-3

*Optional at extra cost.

Safe-Hi Safety Equipment is made by

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(For details, use Key # X-24 on card on page 1)

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DRY CHEMICAL HOSE RACK UNITS

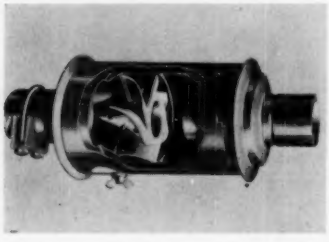
Recently introduced fire extinguishers, manufactured by Walter Kidde & Co., Inc., include the new 200 and 400 pound dry chemical hose rack units which may be wall, floor or truck mounted. These giant units are designed for use on severe electrical, LP gas, or flammable liquid fires.

For details, use **Key # FP-18** on inquiry card on page 1.

COLORED FIRE HOSE

Brightly-colored fire hose for fire stations and industrial concerns has been announced by the Goodyear Tire & Rubber Co. Standard colors are red, yellow, black and white. Red is suggested for fire protection lines; yellow for poorly lighted areas such as mines; black for use in locations where dark discoloring materials prevail. A dacron jacket impregnated with neoprene rubber is highly resistant to oil and chemicals.

For details, use **Key # FP-19** on inquiry card on page 1.



VANE TYPE SPARK ARRESTOR

A spark arrestor, adaptable to mobile and stationary internal combustion engines, has been introduced by the Air-Maze Corp. Designed for reliability and long life, the unit has passed the U. S. Department of Agriculture, Forestry Service, test specifications. The arrestor employes a centrifugal action principal without the use of moving parts. As the exhaust stream flows through the unit, the stationary vane imparts a spinning action to the air flow. This rotary motion drives the heavy particles of hot carbon to the outside of the stream and into the spark trap. The straight flow action of the muffler places minimum back pressure on the engine.

For details, use **Key # FP-20** on inquiry card on page 1.

HOSE-HORN KIT

A new hose and discharge horn assembly is being offered by Walter Kidde & Co. for its 10, 15 and 20 lb. carbon dioxide extinguishers now in the field. Replacement of older hose-horn assemblies with the new

equipment will upgrade the fire extinguishing ability of the older portables equal to Underwriters' Laboratories ratings of 8 B:C, 10 B:C and 12 B:C, respectively. No special equipment is required. Simply unscrew the old hose and screw in the new. A new horn handle clip is included. Existing wall brackets can be re-used after insertion of the new hose-horn.

For details, use **Key # FP-21** on inquiry card on page 1.

FIRE-RESISTANT SKYLIGHTS

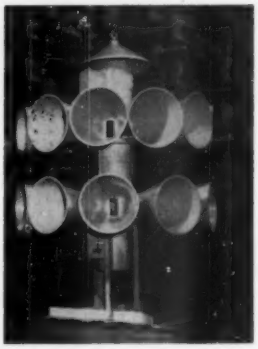
A fire-retardant translucent plastic skylight is being offered by Consolidated General Products, Inc. The new shatter- and crack-proof models are made possible by an exclusive molding technique using an inherently fire-resistant, self-extinguishing polyester resin, Hetron 93-LS, a product of Durez Plastics. Of reinforced-fiberglass construction, the glare-free skylight is said to combine excellent strength and weathering qualities. The manufacturer states that unit will not support combustion even if ignited by direct application of flame.

For details, use **Key # FP-22** on inquiry card on page 1.

SMOKE MASK FOR FIREMEN

New mask from Acme Protection Equipment Co. features a canister with See-O Indicating Window, which tells how long canister will protect against CO. Spring loaded valve decreases leakage of air into top of canister when not in use. Canvas pouch contains both canister and face piece when mask is out of use; pouch has large opening in bottom, heavy zipper in top. Full-Vision face piece is claimed to permit the best all-around vision of any available fireman's mask, by virtue of the lenses being closer to the eyes.

For details, use **Key # FP-23** on inquiry card on page 1.



FIRE-AIR RAID SIRENS APPROVED FOR GOVT. FUNDS

Community sirens which produce three distinct signals, one usable as a fire call and the other two as air raid warnings, have been

approved by the Federal government for matching funds purchase. The new units are manufactured by Federal Sign & Signal Corp. With government contribution of 40 to 45%, net cost to communities will be lower than for a single tone fire siren of comparable quality. In addition, there will be an equivalent defrayment of installation costs. The two models are rated at 115 and 125 decibels.

For details, use **Key # FP-24** on inquiry card on page 1.

FOLDING FIRE ESCAPE

An all-aluminum ladder which, in its folded position, resembles a drain spout, has been developed by Goolman Industries to provide egress from residential and small commercial buildings in case of fire. A 2"-square extrusion forms the cover and one leg of the escape

unit which fastens permanently to the side of the building. At the touch of a release button, located near a second or third story window, ladder opens to its full width. Another release button is located on the first floor to guard against all contingencies. Escape is equipped with non-skid treads, and is both burglar-proof and weather resistant.

For details, use **Key # FP-25** on inquiry card on page 1.

FIRE RETARDANT PAINT

Fire retardant qualities of a new interior paint—F-X, a product of the St. Regis Corp.—were demonstrated in a model two-room building set on fire. After the blaze died out the room in which the fire was begun had blistered walls. The blisters were scraped off and the quarter-inch plywood walls were undamaged and ready for repainting. As part of the demonstration, a suite of living room furniture was placed on a platform of plywood The plywood was coated with F-X Fire Retardant Paint and a fire was set under the platform. The flames failed to penetrate the platform floor and the furniture was undamaged. The paint has received a 10 rating from Underwriters' Laboratories, Inc.

For details, use **Key #FP-26** on inquiry card on page 1.

IMPROVED FIRE HOSE NOZZLE

A new hose nozzle developed by the Fyr-Fyter Co., the Wooster Uni-Flo, incorporates the advantages of a modern fog and straight stream nozzle. Feature innovation is the fact that the nozzle delivers the same gallons-per-minute water flow on all settings. The firefighter can easily shift from straight stream to 15°, 30°, 60° or 90° fog patterns without any change in GPM output. The company states that there is no fluctuation of pump operating pressure, and claims complete accuracy of mixture when metered wet water is being applied through the line.

For details, use **Key # FP-27** on inquiry card on page 1.

IMPROVED BUSH HOOK

The bush hook, a tool for brushing out areas of heavy undergrowth, has been improved with the development of a new production method which permits one piece forged construction. A product of the Mann Edge Tool Co. The implement is used by foresters, fire fighters, utility construction and maintenance crews. The new method eliminates weld imperfections. The eye is forged of the same metal as the hook itself. The handle—36" straight hickory, flame hardened—is power driven by a method that assures permanent grip while elminating any possibility of weakening the eye. Head weight is 3¾ lbs.

For details, use **Key # FP-28** on inquiry card on page 1.

MYCOLEUM

MYCOLEUM all-purpose neutral liquid soap is kind to the most delicate tiles and resilients, yet gives real cleaning power and economy on all resilient, non-resilient and sealed wood floors. Its low-sudsing, free-rinsing properties keep time and labor costs down. And it's an ideal general purpose cleaner for wall, woodwork, and all painted surfaces.

Let Mike 'O clean up for you!

MYCO

Write for information

MASURY-YOUNG CO.
76 Roland Street Boston 29, Massachusetts
OFFICES IN PRINCIPAL CITIES
(For details, use Key # X-25 on card on page 1)

FIRE RESISTANT TILE

Fireproofer Tile for use where a single unit nominal six-inch wall with two-hour fire resistance rating (unplastered) is required has been announced by Natco Corp. Particularly suited for installation in stair wells, elevator shafts, fire walls and partitions, the 10 x 10-foot panels are reported to have withstood a maximum temperature of 1875° F. for two hours and 23 minutes, following which they were subjected to hose streams of 30 lbs. per square inch nozzle pressure for two and one-half minutes without leakage.

For details, use **Key # FP-29** on inquiry card on page 1.

MECHANICAL ALARM SYSTEM

A U.L. approved nonelectrical fire alarm system, announced by Vanguard-Interstate Corp. is operated as a single-station alarm without the need for wires or batteries. Each alarm in the system operates independently. One of the features stressed is ease of installation without the need for expensive wiring or building alterations.

For details, use **Key # FP-30** on inquiry card on page 1.

FIREMAN'S HOOD

A fireman's aluminized overhood for high heat protection is available from Fyrepel Products, Inc. The overhood is made of Fyrepel—3M Brand Scotch Shield aluminized glass cloth fabric which reflects away 90% of the radiant heat encountered; extremely light in weight, has tremendous tensile strength, cannot absorb liquids, oils or greases and is highly resistant to most acids and chemicals. It will

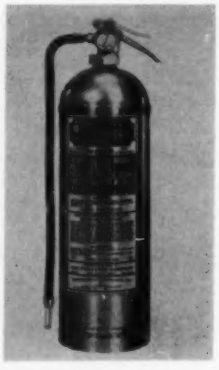
not burn or char. Snapped quickly and easily onto the brim of any fire helmet, it protects the wearer's face, neck, ears, chest and shoulders. A separate aluminized inner lining backs up the surface. Breathing apparatus can be worn beneath the hood for positive water and additional heat protection. The curved facepiece affords a 180 degree arc of vision.

For details, use **Key # FP-31** on inquiry card on page 1.

WATER FIRE EXTINGUISHER

A Pressurized Water Portable Fire Extinguisher—Model 94-23 GMH is being offered by Fyr-Fyter Co. The 2½ gal. unit features stainless steel construction, easy-to-operate squeeze-grip handle, large visual pressure gauge protected by new sturdy gauge guard, new molded hose and other built-in design advances for maximum efficiency and long-wear quality. Underwriters' and Factory Mutual approved for use on Class A fires (ordinary combustible materials, such as wood, paper, cloth, etc.).

For details, use **Key # FP-32** on inquiry card on page 1.



WATER WETTING AGENT

A liquid concentrate, designed for use with any liquid proportioner or eductor to increase the "wetting" power of water, has been developed by the Deynor Corp. Fire-Lik is practically neutral, odorless, will not stain or discolor and is not corrosive. It may be used in a ½% to 1% solution to reduce the surface tension of ordinary water, increasing the water's fire-fighting effectiveness by making it better able to adhere and soak into surfaces and capillary spaces. Compatible with either fresh or salt water, the concentrate is completely soluble and will not salt out at any dilution. It may be stored indefinitely and will remain effective.

For detalis, use **Key # FP-33** on inquiry card on page 1.

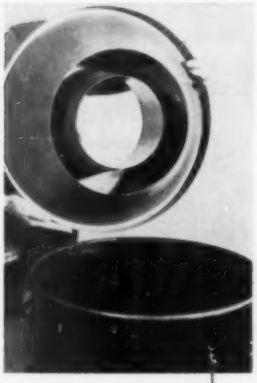
DRY CHEMICAL EXTINGUISHER

Highest rating ever granted a fire extinguisher by Underwriters' Laboratories has been awarded to a 350 lb. dry chemical wheeled extinguisher made by Ansul Chemical Co. The rating was set at 160-B:C. It indicates that a novice using the extinguisher for the first time should be able to put out a standard gasoline pan fire 160 square feet in area. Designed to protect against flammable liquid hazards in fueling and pipeline operations.

For details, use **Key # FP-34** on inquiry card on page 1.

FIRE EXTINGUISHING WASTE CAN

A unique principle, using the smoke from the originating fire as the extinguishing agent, is featured in the new Flame-Tamer waste re-



ceptacle manufactured by Rock Royal Corp. If a fire starts in the receptacle, the smoke is diverted across the opening and back toward the fire, preventing any oxygen from reaching the flame and thus forcing its extinction. Operates without chemicals or moving parts; requires no maintenance. Available in the 30-gallon industrial unit, the 15-gallon commercial unit, a wastebasket unit and the hospital bedside unit.

For details, use **Key # FP-35** on inquiry card on page 1.

NEW THERMAL MONITOR

"Point" monitoring of temperature has been extended with Fenwal's new "Line" Temperature Detector, which is responsive to thermal conditions over its entire length, covering an infinite number of points. Operation is based on the temperature-resistance relationship of selected fusible salt mixtures. These salts are packed into an Inconel tube, and surround a nickel wire center conductor. When temperature reaches the set point, a short circuit is caused between the center conductor and outer tube, which, in turn, actuates an alarm or other working device.

The tubing may be bent to practically any desired configuration, making it useful for difficult locations and equipment having irregular shapes. Standard elements may be connected in series to form lengths of several hundred feet, and, in one system, several different temperatures can be detected. Presently available temperatures are 225°F, 310°F, 400°F, 575°F, 765°F, 900°F, 1050°F and 1200°F.

For details, use **Key # FP-36** on inquiry card on page 1.

FIRE FIGHTING FOAM CART

A versatile "tanker," available from National Foam System, Inc., for multiple fire fighting uses, consists of a steel tank, of 100 or 150 gallon capacity, with storage bins fore and aft, supported by two pneumatic-tired wheels. Unit has an extendable drawbar with ball-and-socket hitch. The 76 inch long cart has two running boards. Bin capacity is approximately 3½ cubic feet—enough to hold up to 150' of 2½" fire hose.

To the basic unit can be added a PW-50 nozzle with a line proportioner drawing foam liquid stored in the tank. With 150-pound pressure from hydrants, nozzle can throw a 4000 GPM stream 180 feet. Tool boxes and dry chemical extinguishers may also be carried. Cart can be equipped with two RP-12 nozzles, mounted on either side. Tank is also useful as a water reservoir, combined with portable fire pump. The pump is capable of delivering, from draft, up to 60 GPM at 100 pound pressure.

For details, use **Key # FP-37** on inquiry card on page 1.

IMPROVED STATIC ELECTRICITY NEUTRALIZER

An improved formula, available in self-spraying cans or bulk for use in neutralizing static electricity is being manufactured by Statikil, Inc. The product may be used for electronic business recorders, meters, plastic materials and machinery, paper stock manufacturing and printing machinery, photographic dryers and developers, textile materials and machinery, etc. Statikil is effective as a spark retardant in hazardous operations like mining, arsenals, chemical, petroleum and other industries.

For details, use **Key # FP-38** on inquiry card on page 1.

Ends Static Hazards!
Resists Acid Damage!
100% Dynel
UNION MADE
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Anti-Static Acid Resistant

WORK CLOTHES

Safe, nationally advertised CHEM-WEAR work clothes are always comfortable. They can be easily laundered without discoloring and will give long service. Wear CHEM-WEAR Shirts, Trousers, Coveralls, Laboratory Coats, Work Aprons and be safe.

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(For details, use Key # X-26 on card on page 1)

FOILLE®
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ORDER NOW from your supplier

(For details, use Key # X-27 on card on page 1)

COMPACT EXTINGUISHER FOR CLASS B & C HAZARDS

A dry chemical fire extinguisher for protection of Class B (flammable liquids) and Class C (electrical) risks has been announced by American LaFrance. Model PDC 2½B is equal to eight 1 or 1½ quart vaporizing liquid extinguishers. By squeezing handles together, a penetrating cloud of especially-prepared dry chemical is expelled under pressure to instantly smother blaze. The extinguisher requires no servicing unless used. Approved by Underwriters' and Factory Mutuals Laboratories and by U. S. Coast Guard. Unit weighs 4¾ pounds, and is supplied with mounting wall bracket.

For details, use **Key # FP-39** on inquiry card on page 1.

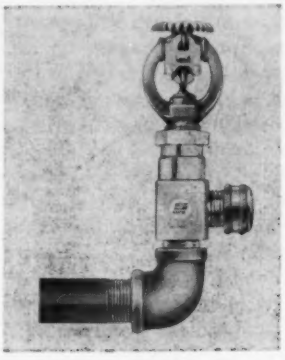
PRESSURIZED DRY CHEMICAL UNIT

A new 2½ pound pressurized dry chemical extinguisher in chrome plate is available from Walter Kidde & Co. Approved by both Underwriters' Laboratories and the U. S. Coast Guard, it features simplified, self-evident operation. Its protected pressure gauge tells at a glance the unit's readiness for action. Easily and quickly recharged either from an air line or a compact pressurized gas cartridge recharge kit.

For details, use **Key # FP-40** on inquiry card on page 1.

LINE TESTER FOR SPRINKLER SYSTEMS

Approved by Factory Mutual Laboratories, Seco Line Testers, from Seco Mfg., Inc., may be permanently installed in either new or existing sprinkler systems in order to determine, at any time, the condition of branch lines. Simply by removing the side outlet cap, connecting a hose and turning the hex head to "open" position, a flow-test can be made for branch line obstructions. Owners may comply with approved system maintenance procedure without sacrificing production or shutting down the system.



For details, use **Key # FP-41** on inquiry card on page 1.

COMBINATION FIRE ALARM—SECURITY PATROL STATION

A flush mounted unit which serves the purpose of both a manual fire alarm station and a watchman's tour station has been developed by Notifier Corp. Of stainless steel with a satin chrome finish, the dual-use device is designed to fit into the decor of modern office buildings, banks, universities, etc.

For details, use **Key # FP-42** on inquiry card on page 1.

COMPACT EMERGENCY BREATHING APPARATUS

Self-contained breathing devices to protect against respiratory hazards in fire fighting and general emergency conditions are offered by Rockwood Sprinkler Co. The PocketAire units feature pure oxygen, lightness of weight, "escape" cylinders as extra precautions, and leakproof masks. Each model contains two cylinders, one of which is a 5-minute unit for use in returning to safety when the working cylinder is exhausted. Available with 25-, 15-, or 5-minute working cylinders. Largest model weighs 9 lbs. All are easily attachable and adaptable to wear under fire-resistant suits or hoods.

For details, use **Key # FP-43** on inquiry card on page 1.

DRY CHEMICAL UNIT WITH MARINE BRACKET

A 2½ pound chrome-plated dry chemical fire extinguisher, approved by the U. S. Coast Guard and Underwriters' Laboratories, has been announced by Randolph Laboratories, Inc. Equipped with marine bracket, the unit has a copper and nickel undercoat and polished chrome finish, eliminating rust spots or paint chipping. Model V-2½ stops a ten-square foot fire in 7 seconds. The extinguisher is waterproof, non-toxic, non-freezing. Equipped with gauge, it is easily filled with air or nitrogen.

For details, use **Key # FP-44** on inquiry card on page 1.

1959 Accident Facts

The National Safety Council has announced that the 1960 edition of its statistical yearbook, "Accident Facts," covering accidents during 1959, now is available.

The publication contains thousands of facts and figures on all kinds of accidents—home, traffic, school, public, farm and work. Several sections are devoted to work accidents, and provide a comprehensive background for an industrial safety program.

"Accident Facts" contains accident rates by major industry groups, and facts on accident trends and off-the-job accidents.

The 96-page publication provides ideas and facts for making speeches, writing articles and planning safety campaigns. Further information on "Accident Facts," and quantity prices, may be obtained from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Atmosphere Analysis Manual

An unusually informative and valuable reference book has recently been published by the American Conference of Governmental Industrial Hygienists. Prepared by that organization's Committee on Air Sampling Devices, under the chairmanship of Irving H. Davis, of the Michigan Department of Health, this authoritative work is entitled "Air Sampling Instruments For Evaluation of Atmospheric Contaminants."

The main part of the manual consists of illustrated descriptions of air sampling devices and equipment. About half of the instruments appeared in the "Encyclopedia of Instrumentation for Industrial Hygiene" published by the University of Michigan in 1956. The new manual has revised this previous information and brought it up to date, and descriptions of about 60 new instruments have been added. The manual has a loose-leaf format, and it is the intention of the committee to revise the material every two years.

Each description includes data on Uses, Operating Principle, Physical Description, Performance Data, Source, Operating Instructions, and Maintenance Instructions.

The sampling instruments are conveniently classified into general types: Impingement Sampling Devices, Filter Media Samplers, Impaction Devices, Direct Reading Instruments, Gas & Vapor Samplers, Colorimetric Gas & Vapor Detectors, Electrostatic Precipitators, Thermal Precipitators, and Miscellaneous Equipment such as pumps, exhausters and sequential samplers.

The manual also includes seven introductory papers by leading authorities covering: Sampling and Analyzing Air for Contaminants in Work Places; Home-Assembled Instruments; Instruments for Sampling and Analyzing Organic Vapors in Air; A New Condensation Nuclei Meter; Developments in the Sampling of Air-Borne Dust; Calibration of Gas, Vapor, and Dust Instruments; Filter Media for Air Sampling.

Copies of the manual can be ordered from the American Conference of Governmental Industrial Hygienists, 1014 Broadway, Cincinnati 2, Ohio. The price of the book is $7.50.

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"burn-quel" was designed to provide immediate relief for Burns and Scalds by means of a fine, aerosol spray. Packaged in an attractive, non-breakable plastic bottle, "burn-quel" eliminates the "mess" usually associated with administering First Aid for Burns.

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(For details, use Key # X-29 on card on page 1)

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REINFORCED PLASTIC
Stretcher Case

- Corrosion Resistant
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- Acid Proof
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- Tough
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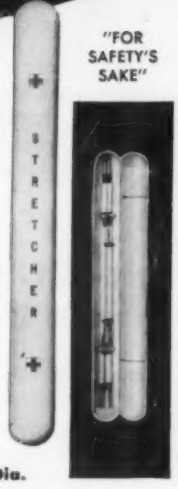

"FOR SAFETY'S SAKE"

Osborn SM
MANUFACTURING CORP.
WARSAW, INDIANA
(For details, use Key # X-28 on card on page 1)

Army Safety Exhibit

How the Army, through an organized, aggressive safety effort, has been able to achieve remarkable results in the elimination and control of accidental loss is the theme of a safety exhibit being shown throughout the nation. Designed to acquaint the public with key elements of the Army accident prevention effort, the exhibit illustrates how accident prevention contributes to more efficient utilization of resources and advances the combat effectiveness of the Army.

Introducing the exhibit is the Army safety policy statement and a film depicting selected elements of Safety in Training, in Combat, and in Production. The viewer then is shown displays of how safety is integrated into the rigorous training required to develop and maintain a combat ready Army. Next, illustrations are used to depict how certain of the hazardous exposures of combat are minimized through training and the use of personal protective equipment. Examples are then shown of controls required by the high hazard potential presented in the manufacture, transportation, storage, and employment of weapons, missiles, nuclear components and other materials comprising the modern day soldier's arsenal of weapons.

Another panel of the exhibit depicts how Army training is used to develop a shield of "safety awareness" for its military and civilian personnel thus enabling them to guard against impulsive actions, the tendency to improvise, acts of impatience, and feelings of impunity. Other sections of the exhibit illustrate the relationship between military and civilian safety personnel, the relationship between direct and indirect costs of accidents, and recognition the Army has received for its success in controlling accidental loss.

The Army has earned the National Safety Council Award of Honor fourteen times in the past sixteen years and became the only Federal agency in the over-50,000 civilian employee classification to have won the highest safety citation in government a second time by winning the President's Safety Award for 1959.

U. S. Army Photograph.

Rehabilitation of Injured Workers

Extensive use of local rehabilitation centers is helping achieve significant progress in the rehabilitation of workers seriously injured in industrial accidents. J. E. Linster, Vice President of Employers Mutuals of Wausau, reports that "encouraging" progress has been made in recent years by a number of medical centers throughout the nation in assisting even paraplegics and quadriplegics regain a relatively active and useful status.

Between 1950 and 1960, Linster's company assumed responsibility for rehabilitation of 76 paraplegic and quadriplegic cases included among a total of 2,489,365 claims resulting from industrial accidents. Through use of a number of private rehabilitation centers, 69 percent of the paraplegic and quadriplegic cases were successfully rehabilitated and eight of the men were even able to return to gainful employment.

"Most effective results are achieved by bringing rehabilitation to the patient rather than by bringing the patient to rehabilitation," Linster explained. "Making it possible for the patient to remain in his own community, among friends and relatives, has an important effect because of the moral support and encouragment received from people close to him in a home environment."

Successful rehabilitation of seriously injured workers requires the coodinated efforts of many medical and vocational specialists, Linster pointed out. Numerous private rehabilitation centers are now able to provide these varied services.

Although the cost of treatment in rehabilitation centers has averaged more than $6,000 per paraplegic and quadriplegic case, industry considers this money well spent, the insurance executive declared. Aside from the humanitarian considerations involved, medical costs would have been substantially greater if rehabilitation efforts were less successful, he said.

Included among rehabilitation centers that have done outstanding work in returning injured industrial workers to more normal lives, Linster listed the following: New York University—Bellevue Medical Center, Institute of Physical Medicine and Rehabilitation, New York 16, N. Y.; Kessler Institute of Rehabilitation, West Orange, N. J.; Mayo Clinic, Rochester, Minn.; The Jewish Hospital of St. Louis, Rehabilitation Division, St. Louis, Mo.; California Rehabilitation Center, Vallejo, Cal.; Baylor University Hospital, Dallas, Tex.; The Bay State Medical Rehabilitation Clinic, Boston 14, Mass.; Duke University, Durham, N. C.; Younker Memorial Rehabilitation Center, Des Moines, Iowa; Institute of Physical Medicine and Rehabilitation, Peoria, Ill.; Charlotte Rehabilitation Hospital, Charlotte, N. C.; Wisconsin Neurological Foundation, Madison, Wis.; Rehabilitation Institute of Chicago, Chicago, Ill.

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SWarthmore 2-0662

(For details, use Key # X-30 on card on page 1)

J. J. Stewart, formerly manager of an ophthalmic laboratory branch, has joined the *TITMUS OPTICAL CO.*, Petersburg, Va., as assistant manager of the Safety Products Division. Mr. Stewart has 20 years of experience in the optical field, much of it in industrial vision and safety work, in Pennsylvania, and in North Carolina. He is a member of the American Society of Safety Engineers.

THE PIONEER RUBBER CO., manufacturer of industrial gloves, has sent one of the first gift shipments of supplies for the *S. S. Hope*, the floating American hospital ship that will visit Southeast Asia shortly on a mercy mission. A complete wardrobe of 18,500 pairs of surgical gloves, to outfit the medical personnel of the floating hospital for one year, was given to Project Hope on behalf of everyone in the company.

Appointment of distributor-jobbers for Columbia floor care products in Hawaii, Amarillo and New Orleans has been announced by the *COLUMBIA WAX COMPANY*, Glendale, California.

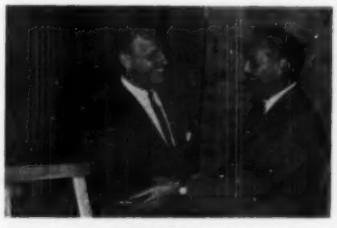
Theodore H. Davies Company, Honolulu, will distribute Columbia products in the Hawaiian Islands. Sales and warehousing will be under the direction of *George M. Wheelwright*, Division Manager of the Davies Mill and Industrial Division.

Time Chemical and Janitor Supply Company, Amarillo, Texas, and *Crescent Sanitary Supply Company*, New Orleans, La., have been appointed as distributors in those areas. *Murrell G. Latimer*, General Manager of the Time firm, will direct an extensive sales program in Amarillo, and *G. D. Fruthaler*, owner of the Crescent Company, will head introduction of Columbia products in the New Orleans area.

Appointment of *James L. Johnson* as Architectural Representative is announced by *Bobrick Dispensers, Inc.*, leading manufacturer and distributor of liquid and powdered soap dispensing equipment. Mr. Johnson will service architects and engineers throughout the state of Texas.

CAMBRIDGE WIRE CLOTH CO., Cambridge, Maryland, manufacturer of metal-mesh conveyor belts and industrial wire cloth and slings, has announced the opening of a new sales territory extending from up-state New York through Massachusetts, Rhode Island, Maine, New Hampshire and Vermont. Headquarters for the new territory will be located at 279 Broadway, Stoneham 80, Mass. *James A. Shuttleworth*, formerly with Metal Hose & Tubing Company, has been appointed to handle the New England district. Mr. Shuttleworth brings twelve years of successful sales and service to the New England and New York State areas, and now takes over the new territory as District Manager.

John P. Spain, General Manager, *Product Service Division, THE BLACK & DECKER MFG. CO.*, has announced the opening of a new Black & Decker Factory Service Branch to serve the rapidly-growing electric tool market in the San Diego, California area. The new San Diego Service Branch is located at 3811 El Cajon Boulevard and staffed by factory-trained personnel. Manager of the new Service Branch is James J. Prendergast.



Herbert D. Setlow (left) and Gov. Ribicoff

Impressive ceremonies featured the dedication of the new $200,000 *M. SETLOW & SON, INC.*, office and industrial building in Orange, Conn., recently. Gov. Abraham A. Ribicoff unveiled a plaque honoring the founder of the nationally known firm, which specializes in the manufacture of work clothes, the late Joseph Setlow. The company was founded in 1896. The new one-story, air-conditioned building covers 17,000 square feet on Indian River Road, one block from the Boston Post Road.

Herbert D. Setlow, the company president, has also recently announced the creation of three top management positions. *Bernard Rappaport* has been named Sales Vice President; *Sidney Victor* is Production Vice President; and *Samuel Weissman* is Executive Vice President.

Rappaport and Victor both joined the company in 1936. Rappaport has held various positions in the shipping and sales departments. Most recently he has been in charge of work shirt and work pants sales. Victor has served in all production departments, has been in charge of maintenance, and recently was production foreman. Weissman joined the company in 1958 as assistant to the president. Before coming to Setlow, he held management positions in the manufacturing, distribution and contracting fields.

Raymond G. Horner, Vice-President—Marketing, *THE BLACK & DECKER MFG. CO.*, has announced the following recent appointments to the electric tool firm's sales organization: *Larry H. Frazier*—Industrial-Automotive Sales Representative in the Los Angeles district, replacing Ralph W. Long, who has resigned; *Robert E. Miller*—Industrial-Automotive Sales Representative in the Chicago district.

Edward O. Hilbush, Jr., for the past 17 years a development engineer with E. I. du Pont de Nemours and Co. (Inc.), has assumed the duties of President of *WEST CHESTER CHEMICAL CO.* Mr. Hilbush has been a director of West Chester Chemical for eight years. The firm manufactures liquid sealants

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MAINTENANCE is easy—a glance tells what's to be replenished;

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for the gas industry, architectural caulking compounds, protective coatings and other industrial specialties.

William I. Hollar, general manager of *JOMAC-NORTH, INC.*, Warsaw, Indiana, has been elected vice president of the company. A subsidiary of Jomac Inc., Philadelphia, Pa., Jomac-North manufactures work gloves, polyvinyl chloride gloves and protective clothing. Hollar joined Jomac as general manager of the Warsaw plant in August 1953. Previously he had been engineer and production supervisor of the Fabricast Division, General Motors Corp., Bedford, Ind.

Joseph Weiser has been appointed as the new Director of Industrial Sales at *FINE ORGANICS, INC.*, producer of industrial maintenance chemicals.

HARTMAN METAL FABRICATORS, INC., formerly of Rochester, New York, have moved into new, larger, and more modern quarters in Waterloo, New York. The new plant more than doubles Hartman's production space and capacity. General Offices have been moved to the new location on West Main Street, Waterloo, New York. The company manufactures industrial and warehouse racks, levelers, and Lift Trucks.

Werlla and Company, 3402 Mercer, Houston, Texas, has been appointed exclusive district representative for *COPPUS ENGINEERING CORPORATION* of Worcester, Massachusetts, manufacturers of mechanical drive steam turbines, industrial gas burners, valves, industrial ventilating blowers and man cooling fans. The territory of Werlla and Company covers the entire southeastern area of Texas formerly handled by R. W. Bier who recently died. *Garrett Phillips* for many years with R. W. Bier has joined Werlla and Company.

Joseph C. Beger has been appointed General Manager of *BOCKSTANZ MAINTENANCE CO.*, 1211 Beaufait, Detroit. The appointment was announced by S. J. Bockstanz, President of the firm. Prior to his new appointment, Beger was with General Motors for eight years.

Three managerial changes have been announced by *AMERICAN AIR FILTER COMPANY, INC:*

Charles S. Stock has been appointed to the post of Manager of Central Marketing, responsible for the formulation, development and coordination of the overall marketing policies and programs. Succeeding Stock as Manager of the School Air Systems Division is *Frank K. Platt*, formerly Assistant to the Manager. At the same time, *A. B. Ullrich, Jr.*, has been named Manager of Engineered Air Systems Division, which markets industrial and commercial heating, ventilating and air-conditioning products.

A Netherlands manufacturer seeks to introduce "Fire-Bird" protective clothing for firemen, rescue teams, and airport safety teams. A completely new process effectively repels radiation heat and direct heating. The coverall type weighs only 5¼ lbs. and is designed for freedom of movement under all circumstances, even in extreme temperatures.

An extra high collar protects the face, and a helmet can be worn in the normal way, with or without a visor. An understrip protects the zipper opening, while the smooth, even surface of sleeves and shoulders prevents the possibility of the suit catching wreckage or burning chips. Complete unit includes gloves and boots.

The wearer is protected against discomfort of a sudden rise in temperature by an isolating layer of air, created by special construction of the material and suit. For additional information, please contact the Netherlands Trade Commission, 551 Fifth Avenue, New York City.

THE PENETONE COMPANY, manufacturing chemists, Tenafly, N. J., and Parapan, Ltd., paint manufacturer, London, England, have formed a new company—*Penetone Parapan, Ltd.* President of the new company is *Harry I. Etelman* who founded the Penetone Company in 1935. Chairman and joint managing director is *Percival G. Randall*, chairman and managing director of Parapan, Ltd. Penetone Parapan, Ltd. is engaged in the manufacture and sale of Penetone's industrial detergents in the United Kingdom.

The most comprehensive fan testing wind tunnel in the world has just gone into operation at the Propellair Division & offices of *ROBBINS & MYERS, INC.* This tunnel is the heart of a new laboratory built after 35 years of fan testing experience and two years of extensive planning. The new nozzle type tunnel is said to have outstanding advantages: Accuracy to within ½%; a range of 60 to 40,000 CFM, uses for all four standard test set-ups, and speeds up to ten times faster than previous wind tunnels for industrial fans.

Pacific Lift Truck Co. has been appointed exclusive Yale Representative in Southern California according to a joint announcement by Horace H. Fritz, III. President of Pacific Lift Truck, and Louis W. Jander, General Sales Manager of *Yale Materials Handling Division, THE YALE & TOWNE MFG. CO.*

As franchised representative, the West Coast company will resume management of the former Los Angeles branch of Yale & Towne. Mr. Fritz said that his company will continue sales and service from the same modern facilities which were used by the Los Angeles branch at 3711 East Olympic Boulevard. It will also operate the Yale San Diego sales and service location at 4410 Kearny Mesa Road.

Appointment of *Thomas McClure* as a research chemical engineer to the research and development staff of *CHARLESTON RUBBER COMPANY* was made recently, it was announced by company president Paul A. Belknap, Jr. Mr. McClure has specialized in engineering training work in phenolic plastics. He will work under the direction of Dr. John J. Keilen, Jr., director of research and development at Charleston Rubber Company.

Safety Appointments

Dr. Edwin A. McGovern has been appointed Works Physician at the Pittsburgh Works of Jones & Laughlin Steel Corporation, it was announced recently by Walter H. Lewis, Pittsburgh Works Manager. Dr. McGovern, who has been Works Physician at J & L's Cleveland Works since 1953, succeeds Dr. Robert J. Halen, who earlier was named J & L's Medical Director.

Dr. McGovern was graduated from Jefferson Medical College, Philadelphia, in 1946. He also earned a Master of Public Health Degree at the University of Pittsburgh's School of Public Health in 1952.

Prior to his J & L service, he was a Resident Physician in Internal Medicine at the Veterans Administration Hospital at Aspinwall, Pa., and Plant Physician at the General Motors Cadillac Tank plant in Cleveland. He also held a Fellowship at the University of Pittsburgh's Graduate School of Public Health.

He is a Diplomate in the American Board of Preventive Medicine in Occupational Medicine; and a member of the American Medical Association, Industrial Medical Association, Ohio Medical Association, Cleveland Academy of Medicine, and the Medical Directors' Club of Cleveland.

From 1947 to 1949, he served in the U. S. Medical Corps.

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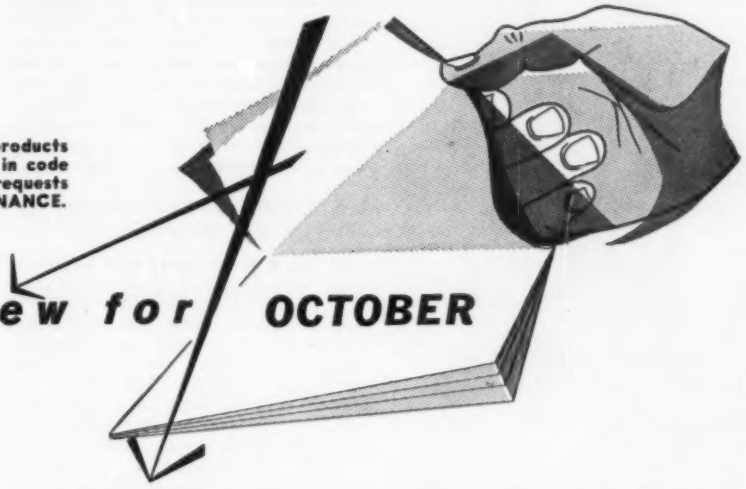
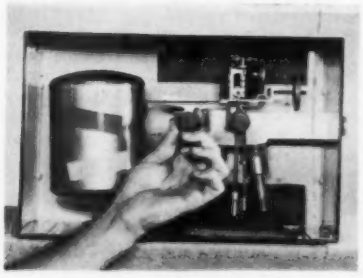
To obtain descriptive literature of products listed, use Reader's Inquiry Card. Write in code number given each item. Send written requests to: Service Dept., SAFETY MAINTENANCE.



what's new for OCTOBER



AUTOMATIC GAS DETECTOR

(Use Key # 861 on Inquiry Card on page 11)

NEW DETECTION device, introduced by Detectogas Instruments, Inc., operates on a mechanical balance principle. The monitor senses changes in air density caused by gas accumulations, but is unaffected by changes in humidity, pressure or temperature. The instrument can set off any type alarm system through its explosion-proof switch. Designed for use in factories, warehouses, boiler rooms, mines and other areas where gas accumulations could be dangerous. Cutaway view in photo shows stainless steel float, balance beam, compensating mechanisms, stabilizing magnets and switch housings.

LUBRICITY STABILIZER

(Use Key # 862 on Inquiry Card on page 11)

A NEW LUBRICITY stabilizer and odorless deodorant, W.S.G., announced by Fine Organics, Inc., is designed to extend the effective life of water soluble cutting oils and to eliminate foul odor and spoilage, thus minimizing purchase of cutting oil and cleaning of machines. It is recommended for Blanchard Grinders, Centerless Grinders, turret lathes, bench lathes, tapping, planing, shaping for all standard cutting and grinding operations. The product is non-corrosive, non-toxic and will not stain any standard metal. It is non-injurious to eyes and skin. Dermatitis is prevented because the material used in W.S.G. is an antiseptic. It is a stable material and can be stored indefinitely.

NEW FLOOR CLEANER

(Use Key # 863 on Inquiry Card on page 11)

A FLOOR CLEANER said to cut cleaning costs by 50% or more has been announced by Worrell-Consolidated Laboratories. For most jobs, the manufacturer states, 15 gallons of the synthetic detergent will make 750 gallons of a ready to use solution—enough to cover 375,000 square feet of floor. The product, Mop Magic, is said to clean any type of floor effectively and harmlessly; rinse more easily; remove hazes and alkalis, holding dirt in suspension; have a pleasant odor; leave no slippery soap film.

SELF-DRAIN FILTER

(Use Key # 864 on Inquiry Card on page 11)

A COMPRESSED air line filter with a new integral self-draining feature has been added to the Crown Line of products manufactured by Hannifin Co. Offered in ½" through 1" pipe sizes, these new units employ the basic parts of the standard Crown filters with the addition of a fool-proof drain valve, linkage and float mounted on a removable plug which screws into the bottom of a new cast aluminum bowl.

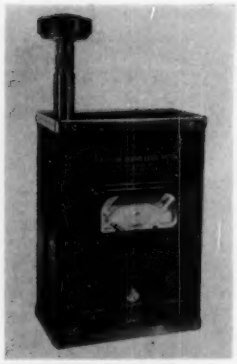
The float and linkage open the drain valve when liquid level in the bowl reaches a pre-determined height, then closes the valve when the float drops to a "low" point during discharge of the liquid. A small quantity of liquid is always present in the bowl during and after the draining sequence providing a water seal which prevents air leakage through the drain valve. A sump is provided in a plug to collect and remove solids from the bottom of the bowl. The drain valve can also be removed for inspection and cleaning.

TEST GAUGE FOR BREATHING APPARATUS

(Use Key # 865 on Inquiry Card on page 11)

OXYGEN AND COMPRESSED air breathing equipment can be subjected to the following tests with Type RZ 22 Universal Test Gauge, a product of Draeger Oxygen Apparatus Corp.: Checks for leakage during positive pressure and negative pressure in the apparatus; checks on the initiating pressure of the lung demand valve; checks on the opening resistance of the positive pressure valve; measurement of volume of the constant flow; measurement of content of the breathing bag; measurement of the initiating volume of the lung demand valve; check on the functioning of the alarm signal, etc.

The apparatus encased in a sturdy oak housing, contains an instrument panel into which are built the actual pressure gauge, 4-way tap, spill-valve or pressure-regulating valve, a threaded socket for coupling the breathing apparatus to be tested, and a bellows for moving the air. The test gauge is being distributed by New Jersey Safety Equipment Co.



SOUND LEVEL METER

(Use Key # 866 on Inquiry Card on page 1)

A FULLY TRANSISTORIZED, battery-operated sound-level meter weighing only 4 pounds with patented, high impedance input, is being distributed by The Korfund Co. Type 1400E, a self-contained acoustical instrument, features exceptional accuracy, stability, and sensitivity, giving direct readings of sound-pressure levels over the entire audio range from 24 db. to 140 db., on its 5" wide meter dial. Its transistors virtually elminate microphonics, and provide superior calibration and amplifier stability.

The instrument, which conforms to A.S.A. and proposed I.E.C. specifications, has a Rochelle salt crystal, diaphragm-type microphone which folds into a recess in the case. The mike feeds into a patented impedance-matching circuit followed by a high-gain amplifier, an 11-position attenuator, calibrated in 10 db. steps, and A.S.A.-standard weighting networks. The meter will accommodate all 600 ohm impedance passive, and any active, filter networks. Powered by 3 dry cells, good for 60 operational hours, or by an external 115–230 volt, 60 cycle source. The unit measures 8¼" x 5¾" x 3¾", and is supplied in a leather carrying case.

LINK PROTECTION FOR HOISTING MECHANISM

(Use Key # 867 on Inquiry Card on page 1)

A LOW-VOLTAGE insulated link designed to insulate a hoisting mechanism from the weldment is offered by E. D. Bullard Co. When a weldment is not properly grounded, the current flows back through the chain into the hoist. Frequently electric hoists are burned out, and the temper of expensive alloy chains has been lost because of this current flow from weldment to hoist. The links are manufactured in sizes ½ to 5-ton, 1 KV. Steel inserts separated with laminated insulating core are wound with glass fiber roving and bonded together with epoxy resin. When completed, Bullard insulated safety links are easily connected by means of a bail or safety hoist hook. There is no danger of impairing hoist lifting capacities—each link has a 4 to 1 safety factor and a 2 to 1 dielectric safety factor.

BACTERIA-PROOF WAXLESS FLOOR FINISH

(Use Key # 868 on Inquiry Card on page 1)

A FOOR POLISH with residual bacteriostatic properties which continue to fight germs and prevent their regrowth as long as the polish is on the floor, has been developed by Puritan Chemical Co. This bacteria-proofing action has been determined in independent laboratory tests, which reports the results of those tests.

Plexin is a self-polishing, non-skid floor finish. It can be applied with applicator or mops to wood, terrazzo, marble, cork, rubber, linoleum, asphalt, vinyl or other composition tile floors. It produces a glossy finish which is scuff-resistant and easily maintained by routine buffings. Non-skid properties provide greater safety for pedestrians.

MULTI GAS DETECTOR

(Use Key # 869 on Inquiry Card on page 1)

THE DRAEGER gas detector is designed for tracing and determining gas concentrations, taking semi-quantitative gas estimations which can be read at the site of the test. This versatile detector is of particular advantage for controlling the maximum allowable concentrations of contaminated air, for detecting leaks in gas pipes and reservoirs, for detecting gas losses in recovery equipment, for identifying certain unknown gaseous contaminations, for technical gas analysis.

Over 22 different detecting tubes for the detection of differenct gases, or different concentrations of gases, are constantly being improved in sensitivity and stability to meet the demand for tubes to detect gases not covered by existing tubes. The gas detector is a hand operated instrument, easy to use, dependable, and has already been extensively proved in field use in chemical plants, oil refineries, steel mills and laboratories of many kinds. Manufactured by Draeger Oxygen Apparatus Corp. and distributed by New Jersey Safety Equipment Co.

ANTI-CORROSION FENCING

(Use Key # 870 on Inquiry Card on page 1)

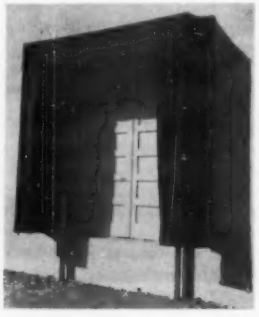
CORROSION RESISTANT, non-conductive, fire retardant fencing, that is rat-proof and has no moisture pick-up (maximum moisture absorption .05), is being manufactured by Firmaline Products of Crompton & Knowles. It does not require paint and eliminates maintenance and replacement costs. Firm-A-Line Fencing is lightweight, flexible and strong. Standard thickness ⅜ inches on 1 inch center. Present standard size 30" x 80", but also manufactured to specification. Weight is ⅓ pound per square foot. Fibre glass tensile strength—125,000 P.S.I.

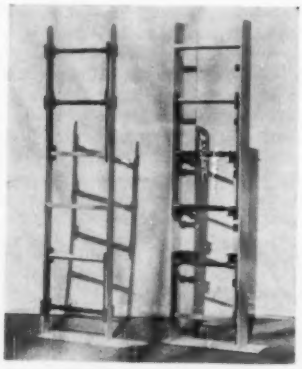
Pigmented resins make possible endless color variations and can provide safety colors and color coding. Can be cut by tinsnips, hacksaw and hand-powered tools. Provides all types of fencing or protective screening in a corrosive atmosphere. Successfully used as machine guards and acid bath guards and fencing around electrical installations. Also used as guards and covers in and around plating tanks and adaptable as fencing for hard-to-get-at areas.

LOADING DOCK CANOPY

(Use Key # 871 on Inquiry Card on page 1)

A CANOPY to facilitate loading dock operations in any weather, is being manufactured by Can-Pro Corp. This new item prevents costly water damage, cuts heat loss, and provides better working conditions on cold or rainy days. A sturdy, galvanized metal frame is covered with flame-resistant, all weather, 14.9 oz. canvas.





TEMPORARY SAFETY RUNG

(Use Key # 872 on Inquiry Card on page 1)

A NEW DEVICE, designed to promote safety and efficiency wherever there is a vertical ladder with one or more defective or missing rungs, has been introduced by Gagnon Enterprise. First intended for cargo holds of sea going vessels, but now applicable to any stationary ladder, the Port-O-Rung can be installed in either upright or inverted position to replace missing top rungs—two units can replace two consecutive rungs. Adapter units can replace any number of missing rungs. One man can make installation in a few minutes.

Eleven models of the patented device are now available for use in cargo vessels and shore installations. Most models can be adapted to two ladders of different dimensions.

SAFETY LIFT HOOKS WITH SWIVEL FEATURE

(Use Key # 873 on Inquiry Card on page 1)

UNLIMITED LOAD maneuverability with safety is offered by the new, built-in swivel feature of the latest model J. & J. Safety Lift Hooks from Mentor Products, Inc. Used with overhead cranes, swivel feature permits dies to be maneuvered 360° around the swivel while the attaching bolt remains securely tightened, and eliminates the dangers of accidents due to failures of attaching bolts which, in conventional hooks, must be loosened for swiveling purposes. Bolt is tightened snugly against a swivel bushing in hook body. Hook revolves around bushing; preventing excessive wear and stress on bolt body and threads. This free maneuvering also guards against fractures and breaks of sling chains and cables against sharp edges of dies. Self-cleaning feature of bolt threads further improves operation.

The lift hooks are made from one-piece drop forgings of chrome-nickel steel, oil quenched and drawn for maximum toughness. Bolts are chrome-vanadium steel. Forged hook, bushing and bolt cannot be disassembled, thus preventing substitution of low-strength components. All assemblies are proof-tested at twice rated capacity before shipment. Available in 3, 6, 9, and 15-ton capacities.

HIGH VISIBILITY SAFETY VEST

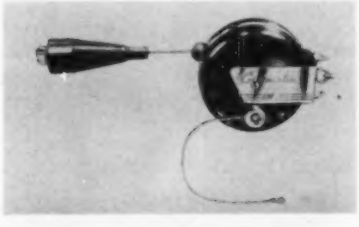
(Use Key # 874 on Inquiry Card on page 1)

A VEST for wear over outer clothing, and made of daylight-fluorescent orange and phosphorescent white stripes, is being manufactured by Sager Glove Corp. The white stripe can be charged by exposure to light, after which it will glow in the dark. The orange is clearly seen in hazy daylight weather. Weatherproof, lightweight and comfortable, it is available in three sizes.

NEW WELDERS' GLOVES

(Use Key # 875 on Inquiry Card on page 1)

A NEWLY DESIGNED welders' glove with a plasticized cuff, offered by Indianapolis Glove Co. is said to provide adequate protection at a substantial savings over full leather gloves. The cuff material is spark proof, light in weight, and flexible. The leather is specially treated and tanned for heat resistance. Number 999 glove is completely lined for insulation and comfort. Features include closed seams, pull tab, wing thumb with thumb shield; available in medium and large sizes.

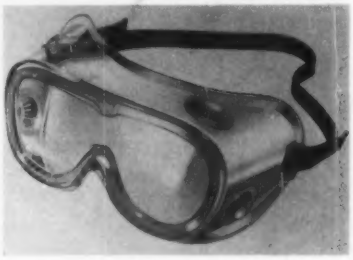


STATIC DISCHARGE REEL

(Use Key # 876 on Inquiry Card on page 1)

WHENEVER CAUTION and safety measures should be exercised, such as bulk transfers of combustible materials, the Cordomatic Static Discharge Reel provides double grounding safety through its continuous circuit grounding lead which doesn't rely on the reel alone for grounding connection. A heavy-duty copper spring clamp features a sliding neoprene guard, thus safely maintaining a weatherproof and dry grounding connection.

A universal mounting bracket permits overhead mounting with 360° rotation or vertical surface mounting with 180° free swivel. A low resistance, nylon-covered galvanized steel cable is equipped with an adjustable neoprene stopball and locks out at any point along its length; cable automatically retracts into reel housing when bulk material transfer is completed.



FLEXIBLE SAFETY GOGGLE

(Use Key # 877 on Inquiry Card on page 1)

A NEW SAFETY goggle from Welsh Mfg. Co. features a soft, flexible frame which cushion-fits to face. All plastic vents—open louvered front and rear for dust conditions, and open louvered rear only for splash conditions, eliminate corrosion and electrical contact problems and provide greater ventilation and visibility. Available in clear or green frame with clear or green single lens.

ROOFING EQUIPMENT SPEEDS OPERATION

(Use Key # 878 on Inquiry Card on page 1)

A MECHANIZED "package" of roofing equipment, manufactured by Hauck Mfg. Co., is reported in practice to have completed roofing operations in 20% less time. Part of the package is a kettle-to-roof pump and parapet unit (shown in photograph) used in conjunction with a 360-gallon-capacity tube-fired kettle at street level. The risk of hot materials spilling on workmen was minimized by this arrangement. New type pump delivers up to 30 gallons a minute to a 100-foot head through a single line system. Pumping is controlled from the roof by simple manipulation of the lanyard. The pump eliminates hazardous open-flame preheating.

FLUORESCENT LIGHTING FOR UNDERGROUND WORK

(Use Key # 879 on Inquiry Card on page 1)

POWER GROOVE configurated fluorescent lamps are being used to light up salt mining operations, among others. The fixtures provide about 10 footcandles to the area shown in photograph, where truck dumps its salt load into a recessed hopper and crusher. There have been no burnouts after an estimated 3,000 hours of operation throughout mine and diminishment of light output from dust accumulation is reported to be less serious than with previous lighting methods.

ICE AND SNOW MELTER

(Use Key # 880 on Inquiry Card on page 1)

UNCONDITIONALLY guaranteed to melt snow and ice, Formula 33 from the Formula 33 Corp. is said to: leave no whitening residue; eliminate a slippery condition; not crack or stain walks or driveways; be useful on roofs and gutters; eliminate shoveling snow; prevent ice from forming. The product can be sprinkled when snow starts to stick to the ground.

SAFETY SHIELD

(Use Key # 881 on Inquiry Card on page 1)

A NEW SHIELD of Safety, to appear on trophies, plaques and other awards, has been inaugurated by Williams Jewelry & Mfg. Co. The company points out that man has used the shield for thousands of years to protect himself from enemies. The safety shield is thus intended to serve as a constant reminder of the need for protection against accidents and the menace of hazardous conditions. The new safety symbol can be used as a substitute for the Green Cross for Safety emblem on awards other than those given by the National Safety Council.

LAB GLASSWARE FOR RADIOACTIVE CONTENTS

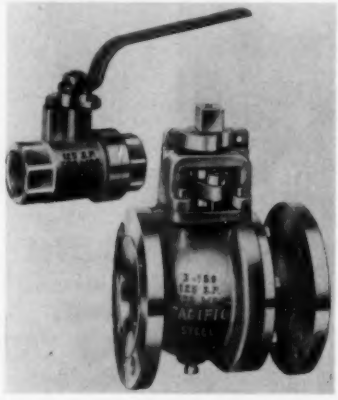
(Use Key # 882 on Inquiry Card on page 1)

A FULL LINE of laboratory glassware items, clearly identified with the A.E.C. Symbol reading: "Caution—Radioactive Material," is now available from Fischer & Porter Co. This positive, permanent marking greatly reduces the radiation hazards that exist with poor or make-shift identification methods and is particularly important in the washing of laboratory glassware, for it is here that most human classification errors are apt to occur.

NEW LINE OF BALL VALVES

(Use Key # 883 on Inquiry Card on page 1)

Developed for general purposes, W.O.G., abrasive materials and corrosive materials, Pacific Valves' new line features straight-thru flow and self cleaning action with a quarter turn operation. Solid Teflon stem packing assembly is designed for "take-up" with a common wrench. Adjustments can be made to regulate the amount of compression in the ball-seals. "Floating ball" action permits the ball to center itself



against the seals; increased pressure aids sealing.

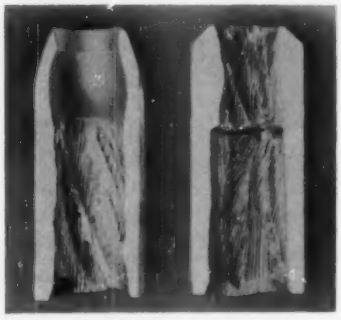
These ball valves are available with screwed ends—sizes ¼" to 2"; cast intergral 150 lb. flanged ends—sizes ½" to 10". Operating temperature range from minus 450°F. to plus 400°F. Pressure range from high vacuum up to 1000 lbs. per sq. in. Standard materials are iron, bronze, aluminum, carbon steel, Type 316, Type 304, Alloy 20 and Monel. Standard seal materials; Buna-N, Neoprene, Viton A, Viton B, Kel-F, Teflon and Nylon.

ALUMINUM SLING SLEEVE

(Use Key # 884 on Inquiry Card on page 1)

AN ALUMINUM SLING sleeve said to offer substantial economies in initial price, swaging costs and handling labor together with freedom from fractures and greatly increased holding power, has been announced by Impact Extrusions, Inc. Although one-third lighter in weight than ordinary sleeves the new Impact Tandem Grip aluminum sleeve is capable of withstanding much greater loads and its application is completed with considerably minimized swaging tonnage thus prolonging the life span of swaging dies, it is reported.

Patented features effect a two-way grip with equalized pressure applied in both body and neck of the unit. This "tandem" grip extends end-to-end with a new measure of strength resulting and with an advanced safety factor which professional testing laboratories have found to register 10% above catalog stipulations. In addi-



tion, the neck-through-body squeeze forces out all air pockets thus assuring against corrosion; and since the sleeve is aluminum, it will not rust and weaken the joint. Tandem Grip sleeve on right side of photograph, shows deep-set rope impressions throughout its length, in contrast to ordinary sleeve.

OIL FILTRATION UNIT

(Use Key # 885 on Inquiry Card on page 1)

EXTREMELY HIGH oil filtration may be accomplished quickly with their new Portable Filtration Unit, reports the Kidde Aero-Space Division, Walter Kidde & Co., Inc. Unit is capable of providing 0.5 or 3.0 micron filtration; a change from one filtration level to another is accomplished by replacing the filter element and resetting a panel valve. Changing from one mode of operation to another is accomplished simply by adjusting two panel-mounted valves. Operation is automatic once the starting switch is moved to "On" position. A signal light provides positive indication that a "change filter" condition exists. Each unit is supplied with a 15 foot length of

power cable to ensure immediate adaptability.

Filtering may be accomplished by: a) Oil may be pumped from an external source, filtered and stored in the 20 gallon internal reservoir; b) Oil may be pumped from the internal reservoir, filtered

and directed to an external destination; c) Oil may be pumped from an external source, filtered and returned to the original or other external source; d) Oil may be circulated and continuously filtered internally.

RESPIRATORY EQUIPMENT—DANGEROUS ATMOSPHERES

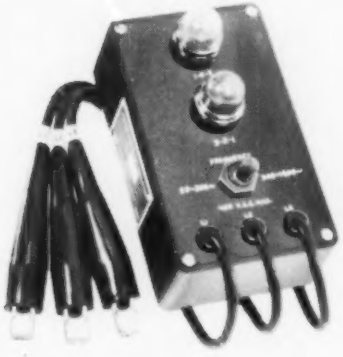
(Use Key # 886 on Inquiry Card on page 1)

EMERGENCY ESCAPE respiratory equipment has been designed by Scott Aviation Corp. for personnel who must work in areas where there is danger of exposure, without warning, to unbreathable atmospheres. Before entering such areas, the cylinder valve of the Ska-Pak is opened. The mask is snapped to the shoulder harness. In case of sudden, unexpected exposure, the oro-nasal mask is quickly brought into position and safely held by gripping the mouth bit with the teeth. The wearer can then safely escape from the hazardous area. The Ska-Pak, is light in weight and can be worn comfortably for long periods of time. Available with a 4 or 7 cubic foot cylinder providing a breathing duration of approximately 5 and 10 minutes, respectively.

PHASE SEQUENCE INDICATOR

(Use Key # 887 on Inquiry Card on page 1)

MODEL VA2 phase sequence indicator is a compact light weight instrument designed for direct connection, without



switching, to polyphase circuits with voltages between 104 and 480 volts. The frequency range of the instrument is 30 to 1000 cycles. Connections are made by means of three 36-inch oil resistant rubber covered test leads. The leads are identified with cable marking bands and new type color-coded clip insulators and strain relief fittings.

The low cost unit features a two-color melamine panel with markings protected by a new laminating process. Panel markings are beneath the surface and are highly resistant to scratching, marring, heat, oil and even common acids. The new process conforms to MIL-P-78A. For maximum reliability under adverse environmental conditions, oil tight panel components are employed. Self-contained in a high resistance case; weight is only 24 ounces. A product of Opad Electric Co.

HEADGEAR WINTER LINERS

(Use Key # 888 on Inquiry Card on page 1)

A VARIETY OF winter liners designed for use in all safety hats and caps are being manufactured by The Fibre-Metal Products Co. The full line includes, in addition to standard models, Neoprene-coated liners without metal parts for use with electrical hats and caps, knitted liners for universal use and disposable liners for perspiration absorption and for use as a "visitor's" sanitary liner.

The liners, made of water-repellent, mercerized and sanforized fabrics, feature

heavy gray outer flannels and red knit linings. Chin straps with adjustable snaps enable snug fit in all sizes available. For extremely frigid climates liner models are made with an extra urethane insert lining. Snap-on mouthpiece gives additional face protection against cold winter winds.

SKID & PALLET HANDLER

(Use Key # 889 on Inquiry Card on page 1)

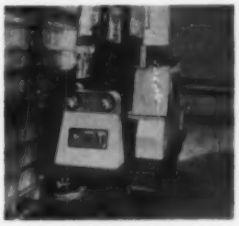
ORDER PICKING operations are facilitated through use of a remote control JackStacker designed by Lewis-Shepard Products, Inc. The unit has an elevating work platform that offers a safety wall for the operator and brings the work load to a convenient working height. The platform has imbedded rollers which allow a platform truck, skid or pallet to be rolled on to it; rollers then lock so that item will not move. Loads from racks can then be placed upon it, or, if a completely loaded skid or pallet is placed on the rollers, it

can be discharged to either side into a rack system. A full set of controls for steering, lifting, lowering and driving are located on operator's platform, which moves up and down with the loading platform.

MIDGET OXYGEN SET PROVIDES 1-HOUR SUPPLY

(Use Key # 890 on Inquiry Card on page 1)

A FOUR-INCH round container, weighing 32 ounces, utilizes a new high strength steel to allow a controlled-flow oxygen supply of one hour. Manufactured by Breath-O-Life Oxygen, it is said to be a major advance in emergency oxygen administration equipment. Operation of the device is by facial contact with a plastic mask. Facial movements involved in the breathing pattern are converted into virtually automatic on-off signals for valve control of oxygen flow. Unit is reported to eliminate the 80% waste inherent in continuous-flow oxygen administration equipment and, by virtue of its size, to make emergency oxygen available almost anywhere.



RIDER-TYPE SWEEPER

(Use Key # 891 on Inquiry Card on page 1)

A HEAVY DUTY, rider-type power sweeper, designed to withstand around-the-clock use, has been introduced by Clarke Floor Machine Co. Model CHD-36 sweeps a 36 in. swath and can be equipped with one or two side brooms for a swath of up to 58 in. Its all-unitized welded body has ¼" steel side plates and a 3/16" channel steel protective bumper encircling the entire machine. It has a 66" turning radius for easy operation in congested areas, and power for sweeping inclined ramps as well as level surfaces.

A new hydraulic system, powered by a 15 hp gasoline engine, propels and operates the sweeper. Shifting of gears is eliminated; one foot pedal controls forward and reverse movement. The sweeper travels at speeds up to 6 mph and sweeps up to 100,000 sq. ft. of floor area per hour. Virtually dust-free sweeping is made possible by a high volume 12-inch turbine which draws dust-laden air from the broom chamber and debris hopper and exhausts it into a non-clogging filter bag, and thence into the debris hopper. Hopper is sealed to prevent recirculation of dust.

zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

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- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!

. . . talks the worker's language!

YOUR IMPRINT HERE!

packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make Your Safety News your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms; it may be day-dreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and showing-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning: First, a tight feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing; BUT if the concentration of the poison gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . so can one part of carbon monoxide in a thousand parts of air when breathed for 90 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe.
1. Be sure your muffler and exhaust are in good condition (they can leak long before they become noisy).
2. Always keep a car window open, even a little, for fresh air.
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will have the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by operating to keep to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but all it can only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

CLEVERLY ILLUSTRATES THE POINT

Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

WINS READERS WITH A FOLKSY APPROACH

Keeping the contents folksy, adding the light note of humor, gets your message across with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of indifference.

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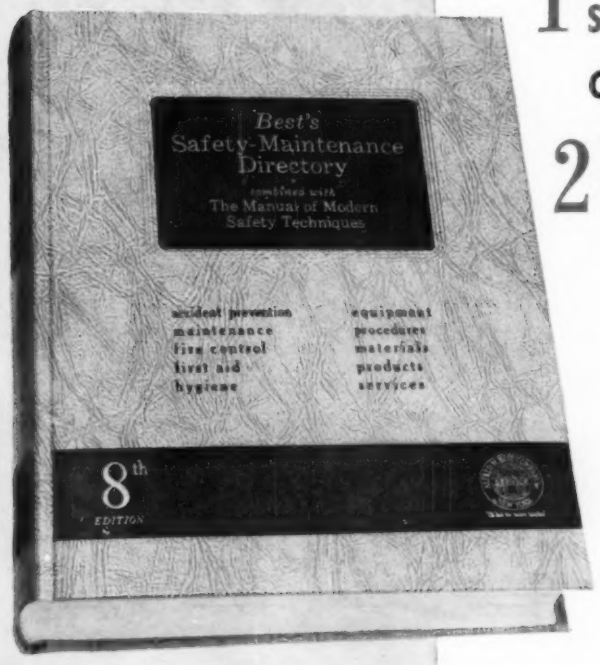

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1. Siver, R.H.: Current Medical Digest, Vol. XXI, September 1954.

2. Weekes, D.J.: New York State Journal of Medicine, Vol. 58, August 1958.

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(For details, use Key # X-31 on card on page 1)